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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Proceeding	91202162
Party	Plaintiff Biotivia, LLC
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Submission	Motion for Summary Judgment
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

In the matter of trademark application Serial N For the mark: THE NEXT GENERATION RE Published in the Official Gazette on August 23	ESVERATROL
BIOTIVIA, LLC Opposer	Opposition No.: 91202162
v.	
CHROMADEX, INC. Applicantx	

OPPOSER BIOTIVIA, LLC'S

MOTION FOR SUMMARY JUDGMENT, OR IN THE ALTERNATIVE, PARTIAL SUMMARY JUDGMENT

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1. Introduction and Summary of Argument

This Opposition arises out of a dispute between competitors with respect to the description of an ingredient used in products made by both. Specifically, the question is whether Chromadex, Inc. ("Chromadex" or "Applicant"), a company that manufactures and sells dietary supplements, may prevent other dietary supplement companies, including Biotivia, LLC ("Biotivia" or "Opposer"), from using the phrase "The Next Generation Resveratrol," and similar phrases, to describe the compound pterostilbene.

As supported in more detail below, and by the attached exhibits, Pterostilbene is commonly described as an advancement or improvement on resveratrol. This description is based on certain physical characteristics of the two substances. Pterostilbene is a compound that is chemically related to resveratrol but has certain advantages over resveratrol, including higher bioavailability. Pterostilbene, as compared to resveratrol, is a newer product that is commonly marketed as a related compound with certain advantages over resveratrol, which is often cast as its predecessor. Pterostilbene is the "next generation" or "next level" of resveratrol, and a trademark preventing all other sellers of pterostilbene from stating this fact is descriptive and not appropriate for registration.

The two major reasons for not protecting descriptive marks are (1) to prevent the owner of a descriptive mark from inhibiting competition in the marketplace and (2) to avoid the possibility of costly infringement suits brought by the trademark or service mark owner. (*In re Abcor Dev. Corp.*, 588 F.2d 811, 813, 200 USPQ 215, 217 (C.C.P.A. 1978); TMEP §1209.) Businesses and competitors should be free to use descriptive

language when describing their own goods and/or services to the public in advertising and marketing materials. (*See In re Styleclick.com Inc.*, 58 USPQ2d 1523, 1527 (TTAB 2001).) In this case, Chromadex seeks to prevent competition in the marketplace by preventing Biotivia from describing pterostilbene as "the next generation of resveratrol," "the next level of resveratrol," or other similarly descriptive phrases, and Chromadex has already initiated one costly infringement suit against Biotivia based, in part, on this description.

This Opposition centers on a legal determination of whether the phrase "The Next Generation Resveratrol" (the "Mark") is descriptive under 15 U.S.C. § 1052(e)(1).

Unlike an Opposition based on likelihood of confusion, which is heavily dependent on factual issues, this Opposition raises few issues of fact – the chemical properties of pterostilbene are undisputed, the relationship between pterostilbene and resveratrol is undisputed, and the use of the phrase by companies other than Applicant is undisputed. Also, unlike many other marks containing the phrase "Next Generation," the Mark is a literal description of the substance sold by Applicant and not simply a marketing slogan.

Chromadex and Biotivia were, until recently, engaged in settlement negotiations related to the case *Chromadex, Inc. v. Biotivia, LLC*, case number 8:11-cv-01273-CJC-MLG. At issue in that lawsuit was Biotivia's use of phrases such as "the next generation of resveratrol" and "the next level of resveratrol" to describe pterostilbene (Exhibit 27, 1 *Chromadex response to RFA (2)(t)*; Declaration of Aaron Shechet, paragraph 2.) As

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¹ All references to numbered exhibits are to those exhibits attached to the Declaration of Aaron Shechet filed concurrently herewith; all references to lettered exhibits are to those exhibits attached to the Request for Judicial Notice filed concurrently herewith.

noted in previous filings in this matter, the Parties hoped to resolve Biotivia's Opposition of the Mark. (Docket # 11.) However, the Parties were unable to do so.

Accordingly, based upon the facts and argument set forth below, Opposer respectfully requests that the Board grant this motion and refuse Chromadex's application.

2. Standing

Any person who believes that he would be damaged by the registration of a mark upon the principal register has standing to oppose. (15 U.S.C. § 1063; see also *Ritchie v*. *Simpson*, 170 F.3d 1092 (Fed. Cir. 1999).) Biotivia is a manufacturer and seller of dietary supplements and related materials, including those that contain resveratrol and pterostilbene, and it believes it will be harmed by the registration of the descriptive phrase "The Next Generation Resveratrol" by Chromadex, a competitor of Biotivia in the supplement and raw material market.

As further evidence of standing, Chromadex has objected, through the filing of a lawsuit, to Biotivia's use of phrases such as "the next level of resveratrol." (Exhibit 27, *Chromadex response to RFA* (2)(t); Declaration of Aaron Shechet, paragraph 2). Chromadex seeks, through its registration of "The Next Generation Resveratrol," to prevent competitors, like Biotivia, from accurately describing the ingredient pterostilbene.

3. Summary of Undisputed Facts

The following facts are not in dispute:

- On or about December 8, 2010, Applicant filed an intent-to-use application for the registration of the mark "The Next Generation Resveratrol," with Serial No. 85193003, (the "Mark") in International Class 001 for "Phytochemicals for use in the manufacturing of dietary supplements, nutritional supplements, nutritional beverages, pharmaceuticals and cosmetics." (Exhibit A ¶ 1.)
- 2. The Mark was published for opposition on or about August 23rd, 2011. (Exhibit A \P 2.)
- 3. Biotivia sells one or more finished products that contain the ingredient Pterostilbene. (Declaration of James Betz ¶ 2.)
- 4. Biotivia also competes with Chromadex in the raw material market. (Exhibit A ¶6; Declaration of James Betz ¶ 2; Exhibits 2, 16, 22, and 23; Exhibit B ¶ 61.)
- Chromadex sells one or more finished products that contain the ingredient
 Pterostilbene. (Exhibit 27 Chromadex Response to Request for Admission
 (2)(f); Exhibit B Chromadex First Amended Complaint ¶ 11.)
- Chromadex is a direct competitor of Biotivia. (Exhibit B − Chromadex First
 Amended Complaint ¶ 27.)
- 7. Pterostilbene is a compound that is chemically related to resveratrol but has certain advantages over resveratrol. (Exhibits 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 25; Declaration of James Betz, ¶¶ 5, 6, and 7.)
- 8. Pterostilbene is commonly described as the next generation of resveratrol; as an improvement upon resveratrol; as a molecule that is similar to, but better than, resveratrol; and the like. (Exhibits 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 25; Declaration of James Betz, ¶¶ 5, 6, and 7.)

- 9. The phrase "Next Generation" is defined as "pertaining to the next generation in a family; also, pertaining to the next stage of development or version of a product, service, or technology;" and the USPTO uses that phrase in a similar fashion.
 (Exhibit 3; Exhibit 28; Exhibits 29, 30; Exhibits C, D, E; Request for Judicial Notice.)
- 10. Pterostilbene is described, in scientific and advertising literature, and by Chromadex, as a compound that is chemically related to resveratrol but has certain advantages over resveratrol. (Exhibits 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21 22, 23, 25; Declaration of James Betz ¶ 6.)
- 11. Chromadex applies "The Next Generation Resveratrol" to one or more product(s) containing pterostilbene. (Exhibits 2, 16, 18, 20, 22, 23, 24; Exhibit 27 *Chromadex Response to Request for Admission* (2)(h).)
- 12. Chromadex has objected, through the filing of a lawsuit, to Biotivia's use of phrases such as "the next generation of resveratrol" and "the next level of resveratrol" to describe pterostilbene (Exhibit B *Chromadex First Amended Complaint* ¶ 33; Exhibit 27 -- *Chromadex Response to Request for Admission* (2)(t); Declaration of Aaron Shechet ¶ 2.)

4. Legal Standard for Summary Judgment

Summary judgment is encouraged in *inter partes* trademark proceedings before the Board,² because the issues are limited to registrability and are therefore "particularly suitable" for disposition by summary judgment. (*Pure Gold, Inc. v. Syntex (U.S.A.) Inc.*,

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² Phoenix Closures, Inc. v. Yen Shaing Corp., 9 USPQ2d 1891, 1892 (TTAB 1988).

222 USPQ 741, 744 n.2 (Fed. Cir. 1984).) Summary judgment is appropriate where there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. (*Giant Food, Inc. v. Standard TerryMills, Inc.*, 229 USPQ 955, 961 (TTAB 1986).)

No genuine issue for trial exists where the record taken as a whole could not lead a rational trier of fact to find for the non-moving party. (*Matsushita Electric Industrial Co. Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1987).) A dispute is genuine only if, on the entirety of the record, a reasonable trier of fact could resolve a factual matter in favor of the non-moving party. (*Sweats Fashion, Inc. v. Pannill Knitting Co.*, 833 F.2d 1560 (Fed. Cir. 1987), citing *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242 (1986).) Disputes over facts that will not affect the outcome under the governing law are immaterial and do not preclude summary judgment.

5. Legal Standard for Descriptiveness

A term is merely descriptive of goods, and therefore unregistrable under Trademark Act Section 2(e)(1), if it conveys an immediate idea of an ingredient, quality, characteristic, feature, function, purpose or use of the goods. (See, e.g., *In re Gyulay*, 820 F.2d 1216, 3 USPQ2d 1009 (Fed. Cir. 1987); and *In re Abcor Development Corp.*, 588 F.2d 811, 200 USPQ 215, 217-18 (CCPA 1978).) A term need not immediately convey an idea of each and every specific feature of the applicant's or registrant's goods in order to be considered merely descriptive; it is enough that the term describes one significant attribute, function or property of the goods or services. (See *In re H.U.D.D.L.E.*, 216 USPQ 358 (TTAB 1982); and *In re MBAssociates*, 180 USPQ 338 (TTAB 1973).)

Whether a particular term is merely descriptive is determined not in the abstract, but in relation to the goods for which registration is sought, the context in which it is being used or is intended to be used on or in connection with those goods, and the possible significance that the term would have to the average purchaser of the goods because of the manner of its use or intended use. (*In re Tower Tech Inc.*, 64 USPQ2d 1314, 1316-17 (TTAB 2002) ("The question is not whether someone presented with only the mark could guess what the goods or services are. Rather, the question is whether someone who knows what the goods and services are will understand the mark to convey information about them.")

6. The Undisputed Facts show that The Mark is descriptive of Pterostilbene

Pterostilbene is a resveratrol analog and exhibits certain advantages over resveratrol. The phrase "Next Generation" describes an advancement over a predecessor. The USPTO uses the phrase "next generation" to describe its new-style Official Gazette. The supplement industry uses the phrase "next generation resveratrol" to describe pterostilbene, and Chromadex uses the phrase "next generation resveratrol" to describe pterostilbene. Accordingly, the Mark is descriptive.

a. The phrase "Next Generation" means "the stage of development which occurs immediately after the present stage in terms of time, rank, or space."

"The Next Generation Resveratrol," as applied to Chromadex's pterostilbene supplement "pTeroPure," or referring generally to pterostilbene, is descriptive. A mark is descriptive if it describes an ingredient, quality, characteristic, function, feature, purpose,

or use of the specified goods or services. (*See In re Gyalay*, 820 F.2d 1216 (1987).) The determination of whether a mark is merely descriptive is made in relation to an applicant's goods and/or services, not in the abstract. (*In re The Chamber of Commerce of the U.S.*, 675 F.3d 1297, 1300, 102 USPQ2d 1217, 1219 (Fed. Cir. 2012); TMEP \$1209.01(b); *see*, *e.g.*, *In re Polo Int'l Inc.*, 51 USPQ2d 1061, 1062-63 (TTAB 1999). "Whether consumers could guess what the product [or service] is from consideration of the mark alone is not the test." *In re Am. Greetings Corp.*, 226 USPQ 365, 366 (TTAB 1985).)

In this case, "The Next Generation Resveratrol" is applied to products that contain pterostilbene, including Chromadex's "pteropure" product. (Exhibit 27 – *Chromadex Response to Request for Admission* (2)(h), (2)(i).) The Mark describes a significant quality, characteristic, function, attribute, or property of pTeroPure's main ingredient, pterostilbene.

The phrase "Next Generation" is defined as "pertaining to the next generation in a family; also, pertaining to the next stage of development or version of a product, service, or technology." (Exhibit 3.) In the Oxford English Dictionary, "Next" is defined as "coming immediately after the present one in order, rank, or space." (Exhibit 29; Exhibit D.) In the same dictionary, "Generation" is defined as "a single stage in the development of a type of product," and the phrase "a new generation of rear-engined sports cars" is offered by way of illustration. (Exhibit 30; Exhibit E.) The dictionary definitions of "Next Generation," "Next," and "Generation" are consistent, agreeing that "Next Generation" means "the stage of development which occurs immediately after the present stage in terms of time, rank, or space." (*Request for Judicial Notice*.)

The phrase "Next Generation" is commonly used to describe the next stage of a product. For example, the USPTO itself describes the new-style Trademark Official Gazette as "the Next Generation TMOG (eOG)." (Exhibit 28.) It appears that the USPTO uses the language "the Next Generation TMOG (eOG)" in trademark publication confirmations to indicate that the new-style Official Gazette is the next stage of development or version of its product, service, or technology.

b. Pterostilbene is the "next generation" of resveratrol.

Pterostilbene, as compared to resveratrol, is a newer product that is commonly marketed as the next stage of resveratrol. (Exhibits 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 25; Declaration of James Betz, ¶¶ 5, 6, and 7.)

Pterostilbene is a compound that is chemically related to resveratrol but has certain advantages over resveratrol, ³ including higher bioavailability. (Exhibits 4, 9, 13; Declaration of James Betz, ¶¶ 5, 6, 7). Pterostilbene's anti-cancer effects are similar to, but more potent than, resveratrol's. (Declaration of James Betz, ¶¶ 7). It is relatively new as a dietary supplement due to advances in packaging, stability, and affordability, and resveratrol is often cast as its predecessor. (Declaration of James Betz, ¶¶ 6, 7).

Pterostilbene is accurately described as the next stage of development of resveratrol. (Declaration of James Betz, ¶¶ 5, 6, and 7). Words like "next generation of resveratrol" and "next level of resveratrol" are used to describe pterostilbene in general, and not any particular brand of pterostilbene, even when referring to pTeroPure.

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³ Specifically, Pterostilbene is a double-methylated version of resveratrol exhibiting a higher bio-availability as it is more easily transported into cells and more resistant to degradation and elimination.

(Exhibits 1, 16, 20, 22, and 23). At least one article dating back to 2009, well before Chromadex's use of the Mark, touts pterostilbene as an advancement on resveratrol. (Exhibit 8).

c. Chromadex acknowledges that pterostilbene is the next generation of resveratrol.

Chromadex itself has used "The Next Generation Resveratrol" and similar phrases for their proper, descriptive purpose, describing the compound pterostilbene, and not any particular product, as the next generation of resveratrol, as superior to resveratrol, and as an improvement on resveratrol. These descriptions appear in Chromadex press releases, news articles, presentations, and brochures. (Exhibits 1, 16, 20, 22, and 23). In one of its brochures, Chromadex states that "pterostilbene is the next generation resveratrol." (Exhibit 24).

Chromadex describes pterostilbene's relationship with resveratrol in detail on its website, stressing that pterostilbene is similar to, but has several key advantages over, resveratrol, and that "pterostilbene is the next generation of resveratrol, as it [is] a methylated resveratrol analog...". (Exhibit 2.)

d. Others in the industry describe pterostilbene as the next generation of resveratrol.

Douglas Labs describes the ingredient pterostilbene as "the star" of a new supplement, and says pterostilbene "has been called a superior form of resveratrol" and that "pterostilbene, a methylated form of resveratrol, is considered the next generation of resveratrol." (Exhibits 5 and 21.)

Many other sources describe the relationship between resveratrol and pterostilbene, confirming that the two compounds are related but that pterostilbene has advantages over resveratrol. (Exhibits 4, 9, and 13, Declaration of James Betz, ¶ 5, 6, and 7.) One source says, about pterostilbene, "...which some have started calling the next generation resveratrol." (Exhibit 13.) In another article describing the advantages of pterostilbene over resveratrol, pterostilbene was called "the other resveratrol," an "anti-oxidant powerhouse" which might be "even better than its famous cousin," resveratrol. (Exhibit 14.) It has been described as "the next generation brain booster" as compared to resveratrol. (Exhibit 14.)

Other supplement marketers and manufacturers have also used "The Next Generation Resveratrol" and similar to describe pterostilbene, and not to describe any particular product. (Exhibits 6, 7, and 10.) Some supplement marketers have actually used the words "next generation of resveratrol" to describe pterostilbene. (Exhibits 11, 12, 15, 17, and 25.) One advertisement states, "Pterostilbene, a structural analog of resveratrol, has been called the next generation of resveratrol." (Exhibit 15.) Another describes its pterostilbene product as "the next generation resveratrol." (Exhibits 17 and 25.) While some of these supplements may contain the ingredient Pteropure, the exhibits referenced in these paragraphs demonstrate the use of the Mark and similar phrases to describe pterostilbene, not to describe Pteropure.

To identify Chromadex's pTeroPure product as "The Next Generation Resveratrol" is to describe the pTeroPure product as pterostilbene; to identify pterostilbene as "The Next Generation Resveratrol" is to merely describe the molecule. (Declaration of James Betz, ¶¶ 5, 6, and 7).

7. The Mark is laudatory and informational, and thus is descriptive under Trademark Act section (e)(1); 15 U.S.C. § 1052(e)(1)

Additionally, laudatory terms, which "attribute quality or excellence to goods or services, are merely descriptive." (*See In Re Nett Designs Inc.*, 236 F.3d 1339, 2001.)

Terms that "are considered to be merely informational in nature, or to be common laudatory phrases or statements that would ordinarily be used in business or in the particular trade or industry, are not recognizable." (*In re Boston Beer Co. L.P.* 198 F3d 1370 (1999).) "The Next Generation Resveratrol," by indicating that pTeroPure, or pterostilbene in general, is an improvement over existing resveratrol supplements, which is both laudatory and informational, is descriptive.

8. Conclusion

Pterostilbene is a resveratrol analog and it exhibits certain advantages over resveratrol. As a result, describing pterostilbene as "the next generation resveratrol," has become common in the industry, and is an accurate description of the molecule. Thus, this motion should be granted and Chromadex's application refused.

Dated January 22, 2014

Respectfully submitted,

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CERTIFICATE OF TRANSMITTAL

This is to certify that a true copy of the foregoing **OPPOSER BIOTIVIA, LLC'S MOTION FOR SUMMARY JUDGMENT, OR IN THE ALTERNATIVE, PARTIAL SUMMARY JUDGMENT**, is being filed electronically with the T.T.A.B. via ESTTA on this day, January 24, 2014.

CHANDLER & SHECHET, LLP Aaron Shechet Counsel for Opposer,

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CERTIFICATE OF SERVICE (37 C.F.R. §§ 2.101, 2.119)

I, AARON SHECHET, Attorney of Record for Opposer, Biotivia, LLC, hereby certify that a true and correct copy of the foregoing **OPPOSER BIOTIVIA**, LLC'S **MOTION FOR SUMMARY JUDGMENT, OR IN THE ALTERNATIVE, PARTIAL SUMMARY JUDGMENT**, was served by:

1. transmission by Certified first class mail service of the United States Postal Service.

on the attorney of record for the opposed application, at the correspondence address of record in the USPTO for said person as of the date of service, as set forth below:

JOSEPH T. NABOR FITCH EVEN TABIN & FLANNERY 120 S LASALLE ST STE 1600 CHICAGO, IL 60603-3590

Date of Mailing: January 24, 2014

Aaron Shechet

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

In the matter of trademark application Serial For the mark: THE NEXT GENERATION R	
Published in the Official Gazette on August 2	23, 2011
x	
BIOTIVIA, LLC	Opposition No.: 91202162
Opposer	••
v.	
CHROMADEX, INC.	
Applicant	
x	

OPPOSER BIOTIVIA, LLC'S MOTION TO SUSPEND PENDING DECISION ON MOTION FOR SUMMARY JUDGMENT

Opposer Biotivia, LLC hereby moves that this opposition proceeding be suspended with respect to all matters not germane to Opposer's motion for summary judgment, filed concurrently herewith, pending the Board's ruling on that motion.

37 C.F.R. § 2.127(d) provides, in part, that "When any party files a motion to dismiss, or a motion for judgment on the pleadings, or a motion for summary judgment, or any other motion which is potentially dispositive of a proceeding, the case will be suspended by the Trademark Trial and Appeal Board with respect to all matters not germane to the motion and no party should file any paper which is not germane to the motion except as otherwise specified in the Board's suspension order...."

/// /// Accordingly, suspension is appropriate in that Opposer's motion for summary judgment is potentially dispositive of this proceeding.

Dated January 22, 2014

Respectfully submitted,

CHANDLER & SHECHET, LLP

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Aaron Shechet Counsel for Opposer, BIOTIVIA, LLC

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CERTIFICATE OF TRANSMITTAL

This is to certify that a true copy of the foregoing **OPPOSER BIOTIVIA, LLC'S MOTION TO SUSPEND PENDING DECISION ON MOTION FOR SUMMARY JUDGMENT**, is being filed electronically with the T.T.A.B. via ESTTA on this day, January 24, 2014.

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CERTIFICATE OF SERVICE (37 C.F.R. §§ 2.101, 2.119)

I, AARON SHECHET, Attorney of Record for Opposer, Biotivia, LLC, hereby certify that a true and correct copy of the foregoing **OPPOSER BIOTIVIA, LLC'S MOTION TO SUSPEND PENDING DECISION ON MOTION FOR SUMMARY JUDGMENT**, was served by:

1. transmission by Certified first class mail service of the United States Postal Service.

on the attorney of record for the opposed application, at the correspondence address of record in the USPTO for said person as of the date of service, as set forth below:

JOSEPH T. NABOR FITCH EVEN TABIN & FLANNERY 120 S LASALLE ST STE 1600 CHICAGO, IL 60603-3590

Date of Mailing: January 24, 2014

Aaron Shechet

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

In the matter of trademark application S	erial No. 85193003
For the mark: THE NEXT GENERATION	ON RESVERATROL
Published in the Official Gazette on Aug	gust 23, 2011
X	
BIOTIVIA, LLC	Opposition No.: 91202162
Opposer	
V.	
CHROMADEX, INC.	
Applicant	

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REQUEST FOR JUDICIAL NOTICE IN SUPPORT OF OPPOSER'S MOTION FOR SUMMARY JUDGMENT

Opposer Biotivia, LLC ("Biotivia") hereby requests that the Board take judicial notice of the following documents attached as Exhibits A through E. This request is made pursuant to Rule 201 of the Federal Rules of Evidence. This request is made in connection with Biotivia's Motion for Summary Judgment, filed concurrently herewith.

Exhibit	Description
A	Applicant's Answer to Notice of Opposition filed in this proceeding.
	(Dkt. 4.)
В	Applicant's First Amended Complaint in <i>Chromadex v. Biotivia</i> 8:11-
	CV11-01273 CJC (MLGx) (C.D. Cal. filed Aug. 30, 2011).
С	USPTO "Trademark Official Gazette Publication Confirmation" for the
	trademark "POTENSHAA."

D	Oxford dictionary website definition of "Next."
Е	Oxford dictionary website definition of "Generation."

A court may take judicial notice of matters of public record in accordance with Federal Rule of Evidence 201. Exhibit A is Applicant's Answer to Notice of Opposition filed in this proceeding. Exhibit B is the First Amended Complaint filed by Applicant against Opposer and was also submitted as an exhibit by Applicant in Applicant's Motion to Suspend Pending Outcome of Civil Litigation filed in this proceeding on March 23, 2012. (Dkt. 5.) Exhibit C is the USPTO "Trademark Official Gazette Publication Confirmation" for the trademark "POTENSHAA." Exhibit D is the Oxford dictionary website definition of "Next." Exhibit E is the Oxford dictionary website definition of "Generation." Thus, these exhibits can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned.

Additionally, Opposer requests that the Board take judicial notice of the definition of "Next Generation" as: "(adjective) the stage of development which occurs immediately after the present stage in terms of time, rank, or space." This is similar to the definition that was provided for the phrase by dictionary.com, which is a commonly-used website for looking up definitions of words or phrases. It is also consistent with the Oxford definitions of "next" and "generation." Lastly, it is such a widely understood definition of the phrase "Next Generation," that the Board may take judicial notice of this definition pursuant to FRCP 201(b)(1), (2).

arroleeas

CHANDLER & SHECHET, LLP Aaron Shechet Counsel for Opposer, BIOTIVIA, LLC

1844 Bagley Ave., Los Angeles, CA 90035 (310) 339-1354

CERTIFICATE OF TRANSMITTAL

This is to certify that a true copy of the foregoing **REQUEST FOR JUDICIAL NOTICE IN SUPPORT OF OPPOSER'S MOTION FOR SUMMARY JUDGMENT,** along with all Exhibits thereto, is being filed electronically with the T.T.A.B. via ESTTA on this day, January 24, 2014.

CHANDLER & SHECHET, LLP Aaron Shechet

Counsel for Opposer, BIOTIVIA, LLC

arrolecto &

1844 Bagley Ave., Los Angeles, CA 90035 (310) 339-1354

anoles &

CERTIFICATE OF SERVICE (37 C.F.R. §§ 2.101, 2.119)

I, AARON SHECHET, Attorney of Record for Opposer, Biotivia, LLC, hereby certify that a true and correct copy of the foregoing **REQUEST FOR JUDICIAL NOTICE IN SUPPORT OF OPPOSER'S MOTION FOR SUMMARY JUDGMENT**, along with all Exhibits thereto, was served by:

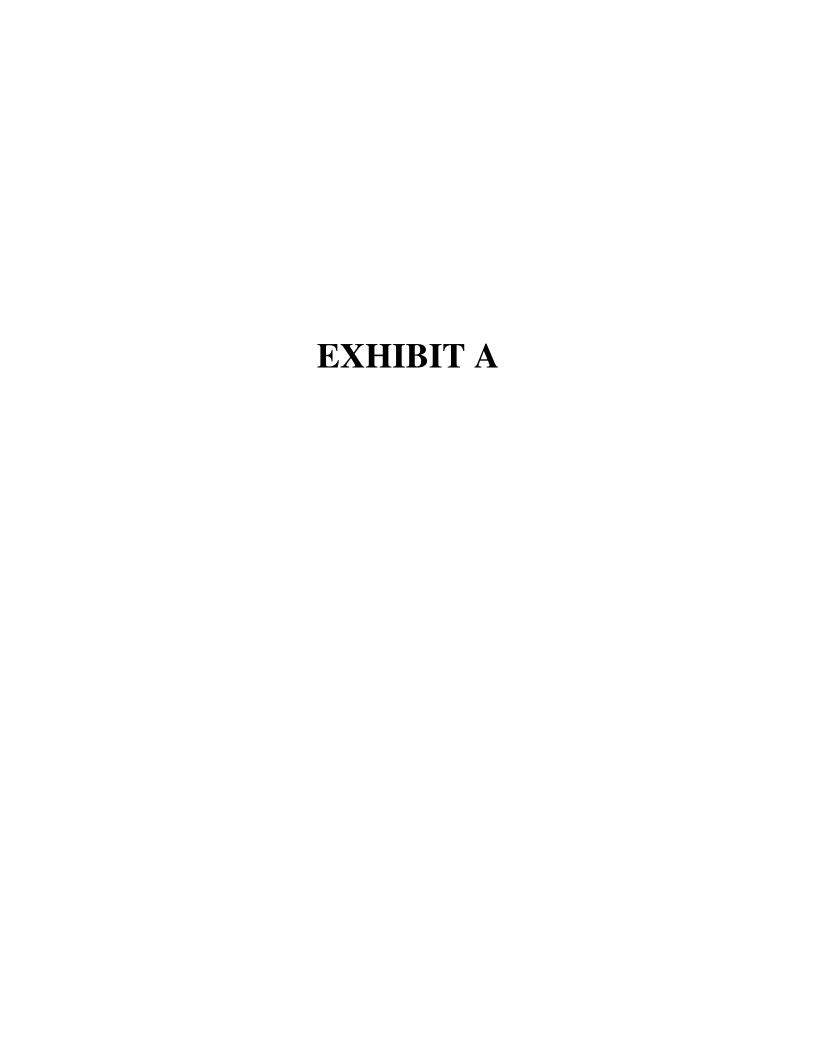
1. transmission by Certified first class mail service of the United States Postal Service.

on the attorney of record for the opposed application, at the correspondence address of record in the USPTO for said person as of the date of service, as set forth below:

JOSEPH T. NABOR FITCH EVEN TABIN & FLANNERY 120 S LASALLE ST STE 1600 CHICAGO, IL 60603-3590

Date of Mailing: January 24, 2014

Aaron Shechet



ESTTA Tracking number:

ESTTA443368

Filing date:

11/28/2011

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Proceeding	91202162
Party	Defendant ChromaDex Inc.
Correspondence Address	JOSEPH T. NABOR FITCH EVEN TABIN & FLANNERY 120 S LASALLE ST STE 1600 CHICAGO, IL 60603-3590 trademark@fitcheven.com
Submission	Answer
Filer's Name	Joseph T. Nabor
Filer's e-mail	trademark@fitcheven.com
Signature	/Joseph T. Nabor/
Date	11/28/2011
Attachments	8788-100902 Biotivia LLC v ChromaDex Inc Answer to Notice of Opposition_1.pdf (6 pages)(222862 bytes)

8788-100902

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Biotivia, LLC	*	***.)	OPPOSITION NO. 91/202,162
Орр	ooser,)	
V.)	
)	
_1	_		•)	
ChromaDex,	Inc.,	•)	
App	olicant.)	
Serial No.:	85/193,003)	
Filed:	December 8, 2010)	
Mark:	THE NEXT)	
GENERATION	ON RESVERATROL)	
Published:	August 23, 2011)	

ANSWER TO NOTICE OF OPPOSITION

ChromaDex, Inc., Applicant in the above-identified Opposition, hereby responds to the Notice of Opposition filed by Biotivia, LLC (hereinafter "Biotivia") opposing registration of the THE NEXT GENERATION RESVERATROL Application Serial No. 85/193,003.

In response to the Notice of Opposition of Opposer, Applicant states as follows:

I. According to the Trademark Office records, on or about December 8, 2010, Applicant, Chromodex, Inc. ("Chromadex"), filed an intent-to-use application, under section 1B, for the registration of the mark "The Next Generation Resveratrol," with Serial No. 851.93003, (the "Mark") in International Class 001 for "Phytochemicals for use in the manufacturing of dietary supplements, nutritional supplements, nutritional beverages, pharmaceuticals and cosmetics.'

ANSWER: Admitted.

2. The Mark was published for opposition on or about August 23rd, 2011.

ANSWER: Admitted

3. Opposer, Biotivia, LLC ("Biotivia"), has timely filed for, and the Trademark Trial and Appeal Board has granted, a 30-day extension of time to file an opposition to the registration of the Mark until October 22, 2011.

ANSWER: Applicant admits only that an Extension of Time to file a Notice of Opposition was filed with the Trademark Trial and Appeal Board against Applicant's mark. Applicant denies each and every other allegation remaining in Paragraph 3 of the Notice of Opposition.

4. Biotivia is a Delaware Limited Liability Company with a principal place of business at 1 River Place, Ste. 1001, New York, NEW YORK 10036 and manufactures and sells a variety of dietary supplements, including supplements which contain resveratrol and/or pterostilbene ingredients.

ANSWER: Applicant is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 4 of the Notice of Opposition, and on that basis denies each and every allegation contained therein.

5 Biotivia sells one or more finished products which contain the ingredient Pterostilbene.

ANSWER: Applicant is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 5 of the Notice of Opposition, and on that basis denies each and every allegation contained therein.

6. Chromodex sells one or more finished products which contain the ingredient Pterostabene, and is a direct competitor of Biotivia.

ANSWER: ChromaDex admits that it sells certain pterostilbene products but is with knowledge or information sufficient to form a belief as to the truth of the remaining allegations contained in Paragraph No. 6 of the Notice of Opposition and on that basis denies each and every allegation not specifically admitted.

7. Chromodex applies the Mark, on its website and in its advertising, to pterostilbene products.

ANWER: Denied.

8. The phrase "Next Generation" is defined as "pertaining to the next generation in family; also, pertaining to the next stage of development or version of a product, service, or technology." (See Exhibit A).

ANSWER: Applicant is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 8 of the Notice of Opposition, and on that basis denies each and every allegation contained therein.

9. Pterostilbene is described, in scientific and advertising literature, as a compound which is chemically related to resveratrol but has certain advantages over resveratrol, including higher bioavailability. Specifically, Pterostilbene is "a double-methylated version of resveratrol exhibiting a higher bioavailability as it is more easily transported into the cell and more resistant to degradation and elimination." (See Exhibit B).

ANSWER: Applicant is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 9 of the Notice of Opposition, and on that basis denies each and every allegation contained therein.

10. Pterostilbene is often described as the next stage of development of resveratrol. Words like "next generation of resveratrol" and "next level of resveratrol" are used to describe pterostilbenes in general, and not any particular brand of pterostilbene, even when referring to Chromadex's products.

ANSWER: Applicant is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 10 of the Notice of Opposition, and on that basis denies each and every allegation contained therein.

11. At least one article dating back to 2009, well before Applicant's use of the Mark, touts pterostilbene as an advancement on resveratrol.

ANSWER: Applicant is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 11 of the Notice of Opposition, and on that basis denies each and every allegation contained therein.

12. The Mark "The Next Generation Resveratrol," by indicating that Chromadex's products, or pterostilbene in general, is an improvement over existing resveratrol supplements, is laudatory and informational, and thus is descriptive. Trademark Act section (e) (1); 15 U.S.C. \$ 1052(e)(1).

ANSWER: Denied.

13. The Mark consists primarily of a combination of words which, when applied to the goods of Chromadex, is merely descriptive under Section 2(e)(1) of the Trademark Act, 15 U.S.C. \$ 1052(e)(1), in that the Mark describes an ingredient, quality, characteristic, function, feature, purpose, or use of the goods identified in the application for registration of the Mark, and/or is merely laudatory, and has no acquired distinctiveness or secondary meaning sufficient to support registration.

ANSWER: Denied.

14. The Mark does not function to identify Chromadex's goods and distinguish them from those offered by others and has no acquired distinctiveness or secondary meaning sufficient to support registration.

ANSWER: Denied.

15. Registration of the Mark will prevent Biotivia, a seller of pterostilbene supplements, from using phrases which are descriptive of pterostilbene, and will inhibit Biotivia's ability to accurately describe and effectively market its products.

ANSWER: Denied.

16. Chromadex seeks to prevent Biotivia from using phrases it deems "similar" to the Mark, and has filed a lawsuit in the Central District of California, case number 8:11-CV11-01273 CJC (MLGx), partly based on Biotivia's use of phrases such as "taking resveratrol to the next level," which are descriptive of pterostilbene.

ANSWER: ChromaDex admits that it has filed the specified lawsuit which claims speak for themselves.

17. Because the Mark is descriptive, registration should be refused.

ANSWER: Denied.

Applicant hereby denies each and every allegation contained in the Notice of Opposition which is not otherwise herein responded to.

AFFIRMATIVE DEFENSES

For its affirmative defenses to the Opposition, Applicant states as follows:

- 1. The Notice of Opposition fails to adequately state a claim upon which relief maybe granted.
- 2. On information and belief, Opposer lacks standing to bring the Notice of Opposition.

THEREFORE, Applicant respectfully prays that opposition to registration of it's THE NEXT GENERATION RESVERATROL mark, Application Serial No. 85/193,003, be dismissed, that a Notice of Allowance for Application Serial No. 85/193,003 be issued, and that Applicant be granted such other and further relief as the Board deems just and proper.

Respectfully submitted,

ChromaDex Inc.

November 28, 2011

Joseph P. Nabor

ÉИСН, EVEN, TABIN & FLANNERY

120 South LaSalle Street, Suite 1600

Chicago, IL 60603-3406 Telephone: 312.577.7000 Facsimile: 312.577.7007

Attorney for Applicant

CERTIFICATE OF SERVICE

I, Joseph Nabor, Attorney for the Applicant, hereby certify that a copy of the foregoing ANSWER TO NOTICE OF OPPOSITION was served by first class mail, postage prepaid, upon:

Aaron Shechet, Esq. Chandler & Shechet, LLP 1844 Bagley Ave. Los Angeles, CA 90035

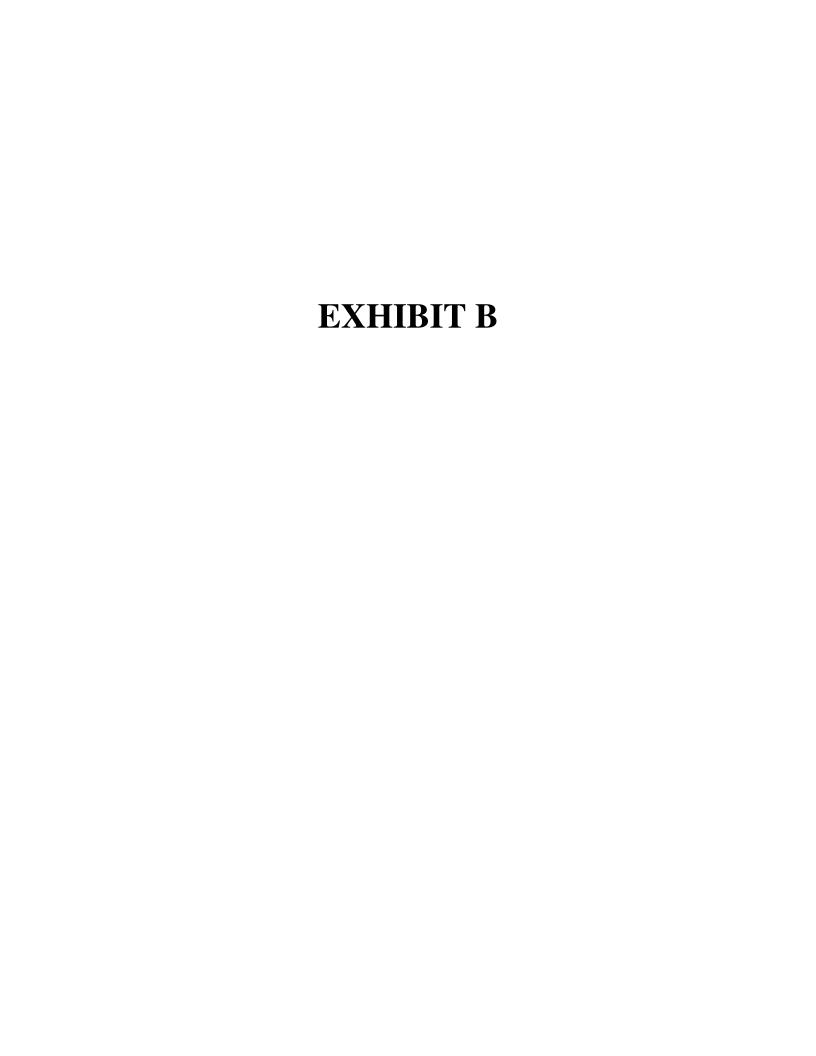
Attorneys for Opposer

on this 28^{th} day of November 2011.

oseph T. Nabor

FITCH, EVEN, TABIN & FLANNERY
120 South LaSalle Street, Suite 1600

Chicago, IL 60603-3406 Telephone: 312.577.7000 Facsimile: 312.577.7007



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	ATES DISTRICT COURT ISTRICT OF CALIFORNIA
CHROMADEX, INC., a California corporation,	CASE NUMBER
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DEFENDA	AT(\$) .
DEFENDANT(S): BIOTIVIA LLC end BIOTIV	VIA BIOCEUTICALS, LLC
A lawsuit has been filed against you.	·
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Within 21 days after service of the	is summons on you (not counting the day you received it), y
must serve on the plaintiff an answer to the attac	ched complaint <u>X</u> First amended complaint
Counterclaim cross-claim or a motion un	nder Rule 12 of the Federal Rules of Civil Procedure. The ans
	mey, Erik L. Jackson, Esq. , whose addres
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	uite 3700. Los Angeles. CA 90017 . If you fail to do
	for the relief demanded in the complaint. You also must file
your answer or motion with the court.	
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NAME, ADDRESS & TELEPHONE NUMBER OF ATTORNEY(5) FOR OR. PLAINTIFF OR DEPENDANT IF PLAINTIFF OR DEFENDANT IS PRO PER	-	•					
Erik L. Jackson, State Bar No. 166010 ejackson@cozen.com			. 0	ę <i>c</i>			
COZEN O'CONNOR 601 South Figueroa Street, Suite 3700			i				
Los Angeles, CA 90017			Ì	AU SEE			
Telephone: 213.892.7900 ATTORNEYS FOR: CHROMADEX, INC.			. [25.2	1		
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BIOTIVIA BIOCEUTICALS, LLC, a Delaware		CERTU	FICATION	AND NOTICE			
corporation				TERESTED PARTIES			
Defer	endant(s)		(Local Rule				
TO: THE COURT AND ALL PARTIES APPEAR	RING OF	RECORD:					
•							
The undersigned, counsel of record for CHROMAD (or party appearing in pro per), certifies that the	followi	ng listed party (or					
interest in the outcome of this case. These rep disqualification or recusal. (Use additional sheet if n	•		enable the	Court to evalua	te possible		
PARTY			CONNECT	CION			
(List the names of all such pa	arties and i	=	and interest.)				
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August 24, 2011	11		- · · · · · · · · · · · · · · · · · · ·				
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CLERK U. . ILL THIST COURT LOS ANGELES UNITED STATES DISTRICT COURT CENTRAL DISTRICT OF CALIFORNIA CASE NUMBER: Chromadex, Inc. 8:11-cv-01273 CJC MLGx PLAINTIFF(S), Biotivia Bioceuticals, LLC NOTICE TO COUNSEL RE: COPYRIGHT, PATENT, AND TRADEMARK REPORTING REQUIREMENTS DEFENDANT(S). TO: COUNSEL OF RECORD and PRO SE LITIGANTS: Pursuant to Local Rule 3-1 of this court, in all cases where jurisdiction is invoked in whole or in part under 28 U. S. C. Section 1338 (regarding patents, plant variety protection, copyrights and trademarks), counsel shall, at the time of filing of the complaint, provide the Clerk with an original and two (2) copies of the required notice (AO 120) to the Patent and Trademark Office in patent, plant variety protection and trademark matters and / or an original and two (2) copies of the required notice (AO 121) in copyright matters. The required forms of notice to the Patent and Trademark and Copyright Offices are enclosed for your convenience. ď Counsel: Please complete the enclosed form and electronically file within ten (10) days. Pro Se Litigants: Please complete the enclosed form(s) and return to: Clerk, U. S. District Court, ATTN: Civil New Actions, at the following address within ten (10) days: 411 West Fourth St. ☐ 312 N. Spring Street ☐ 3470 Twelfth Street Main Floor, Room G-8 Room 134 Suite 1053 Riverside, CA 92501 Los Angeles, CA 90012 Santa Ana, CA 92701-4516 Phone: (213)894-2215 Phone: (714)338-4750 Phone: (951)328-4450 CLERK, U. S. DISTRICT COURT

Note: Please refer to the court's Internet website at www.cacd.scourts.gov for local rules and applicable forms.

Bv. J.Prado

Deputy Clerk

Dated: 8/24/11

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UNITED STATE CENTRAL DISTR	S DISTRICT COURT LOS ANGELES
CHROMADEX, INC.	CASE NUMBER SACV11- 1273 CJC (MLGx)
PLAINTIFF(S)	
V. BOTIVIA BIOCEUTICALS, LLC DEFENDANT(S).	NOTICE TO PARTIES OF ADR PROGRAM

Dear Counsel,

The district judge to whom the above-referenced case has been assigned is participating in an ADR Program. All counsel of record are directed to jointly complete the attached ADR Program Questionnaire, and plaintiff's counsel (or defendant in a removal case) is directed to concurrently file the Questionnaire with the report required under Federal Rules of Civil Procedure 26(f).

Clerk, U.S. District Court

08/24/11		By: JPRADO	
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Date	•	Denuty Clerk	

UNITED STATES DISTRICT COURT CENTRAL DISTRICT OF CALIFORNIA						
CHROMADEX, INC,	CASE NUMBER					
PLAINTIFF(S)	SACV11- 1273 CJC (MLGx)					
V.	SACVII- 12/3 CJC (NILGX)					
••						
BOTIVIA BIOCEUTICALS, LLC	ADR PROGRAM QUESTIONNAIRE					
DEFENDANT(S).						
(1) What, if any, discovery do the parties believe is essential conference or mediation? Please outline with specificity the date(s). Please outline any areas of disagreement int this retthat you will be able to take in the event this case does not see	type(s) of discovery and proposed completion gard. Your designations do not limit the discovery					
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(2) What are the damage amounts being claimed by each pl	aintiff? Identify the calegories of damage					
claimed [e.g., lost profits, medical expenses (past and future)	•					
damage to reputation, etc.) and the portion of the total damage	- -					

diator in lieu of the court's ADR Program?
oyment (442), check all boxes that describe the legal bases of
[_] Age Discrimination
California Fair Employment and Housing Act
Rehabilitation Act
and agree that the above-mentioned responses are true and
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Court Reporters Office

Ordering Transcripts,

District court civil and criminal imascripts may be ordered by making financial arrangements with the inclividual court reporters. To identify which reporter to conjuct for a specific in-court matter before April 2002, please refer to the appropriate docket entry on the civil of knimmals facilities which which is now electronically available on PA (IFR MBS) speciment court matters after April 2012 the court assignment schedule is on the website. Goal (1901) and Reporter Schedule, then view all and select the direction and

to check. Transcript orders from magistrate judge from disculd be placed with the Court Recording Section of the Records Department. Bease defer to the website for the necessary telephone numbers applicable fees, and identification of court reporter assignments. For more information, you can call the court reporter schedulers of fice at 213-894-0658.

Ordering Realtime Connection

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Touch Screens

A touch screen is available in the lobby of each division. This device provides court addresses, hours, telephone, numbers, a daily master calendar, and the weekly Post Indictment Arraignment calendar.

UNITED STATES DISTRICT COCK

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U.S. Counthouse,

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312 North SpringiSues

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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA



Gerk's Office
Services for Attorneys
and the
General Public

October 2010

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Information about the district court may be obtained on line. Users can gather information about attorney admissions? and filing procedures; review master and daily calendars. requirements for court appearances; Local Rules General :: Orders and recentives wedland published approprie conqueres the congress of th

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Records

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to records_cacd@cacd.uscourts.gov; Southern Division: 714-338-4785; Eastern Division: 951-328-4450. To identify which clerk's office maintains the case file you wish to view, please refer to the prefix of the case number (two digits after the letters represent the filing year; for example, 09 is year 2009) as follows:

Western Division (Los Angeles)

Southern Division (Santa Analysis SACV-09-0000 chill SACR 09-0000 chimical Eastern Division (Riverside) EDGV.09.0000 = civil | FDGR:09-0000 = criminal

There is a charge for copies, certifications, and exemplifications. For more information on closed or archived court records, visit the court's website at www.cacd.uscourts.gov/records.

Photocopy Service

Photocopy services are available from outside copy services. Please note that exemplifications and certifications must still be obtained from the clerk's office. For payment options, contact the appropriate vendors: Western Division: 213-253-9413; Southern Division: 714-543-8123; Eastern Division: 951-328-4470.

Interpreter Services

The interpreter services section of the clerk's office provides interpreters for all court proceedings instituted by the United States that require the use of a language other than English. The section also makes interpreter referrals in response to inquiries from law firms and the general public in cases where court-appointed interpreters are not indicated. For further information, please call 213-894-4370 or visit the court's website at www.cacd.uscourts.gov/interpreters.

Jury Section

The court's website offers valuable information to prospective jurors. You may see responses to frequently asked questions, read the General Order 07-10 regarding the selection of Grand and Petit jurors; download the jury handbook; review jury information for all three divisions; and verify your status/instructions utilizing the Automated Juror Information System (AJIS). Submit questions or comments to the jury section at jury@cacd.uscourts.gov. Wired and wireless Internet access is available in jury assembly rooms.

Attorney Work Room

For attorneys, a work room is located on the second floor of the Spring Street Courthouse, on the first floor of the

Royal Esderal Building on the renth floor of the Royald Reagan hederal Builday and U.S. Courthouse and on the // intellifloupor the Riverside Courthouse of hemorkroperies, and religious property of the constraint of the second conference rooms.

Evidence:Presenters The clerk's office has evidence presenters available for attorneys to use in court proceedings. This technology was connects an overhead projector to monitors which displayar pilitures for the judge anothers and the jury . There is on a configuration as the equipment showever some me healthings admand for its use, the equipment is reserved to the first with equipments research of the res Valeocopterenciae allows parties apports stellocanous ne pear at court hearings by wave hewe regarded and ruse partors. The abprobrate contagnormal prints eather about

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Pro Sel The Federal Pro Se located on the firm floor Rooks 25 in the Federal Se Courthouse at 312 North Spring Street LostAngeless and differing The Bro. Claim former internating by a large of the Spring Street LostAngeless of the Spring Street Courthouse of the Spring

UNITED STATE DISTRICT COURT CENTRAL DISTRICT OF CALIFORNIA

NOTICE TO COUNSEL

The court has directed that the following rules be specifically called to your attention:

- I. Continuing Obligation to Report Related Cases (Local Rule 83-1.3.3)
- II. Service of Papers and Process (Local Rule 4)

I. CONTINUING OBLIGATION TO REPORT RELATED CASES

Parties are under the continuing obligation to promptly advise the Court whenever one or more civil actions or proceedings previously commenced and one or more currently filed appear to be related.

Local Rule 83-1.3.3 states: "It shall be the continuing duty of the attorney in any case promptly to bring to the attention of the Court, by the filing of a Notice of Related Case(s) pursuant to Local Rule 83-1.3, all facts which in the opinion of the attorney or party appear relevant to a determination whether such action and one or more pending actions should, under the criteria and procedures set forth in Local Rule 83-1.3, be heard by the same judge."

Local Rule 83-1.2.1, states: "It is not permissible to dismiss and thereafter refile an action for the purpose of obtaining a different judge."

Local Rule 83-1-2.2 provides: Whenever an action is dismissed by a party or by the Court before judgment and thereafter the same or essentially the same claims, involving the same or essentially the same parties, are alleged in another action, the later-filed action shall be assigned to the judge to whom the first-filed action was assigned. It shall be the duty of every attorney in any such later-filed action to bring those facts to the attention of the Court in the Civil Cover Sheet and by the filing of a Notice of Related Case(s) pursuant to L.R. 83-1.3.

II. SERVICE OF PAPERS AND PROCESS

Local Rule 4-2 states: "Except as otherwise provided by order of Court, or when required by the treaties or statutes of the United States, process shall not be presented to a United States Marshal for Service." Service of process must be accomplished in accordance with Rule 4 of the Federal Rules of Civil Procedure or in any manner provided by State Law, when applicable. Service upon the United States, an officer or agency thereof, shall be served pursuant to the provisions of FRCP 4 (i). Service should be promptly made; unreasonable delay may result in dismissal of the action under Local Rule 41 and Rule 4(m) of the Federal Rules of Civil Procedure. Proof of service or a waiver of service of summons and complaint must be filed with the court.

This notice shall be given by the Clerk to the plaintiff at the time an action is filed (or to the defendent at the time a notice of removal is filed), and by the plaintiff to other parties as attachments to copies of the complaint and summonses, or by the defendant to other parties as attachments to copies of the notice to plaintiffs of removal to federal court, when served.

UNITED STATES DISTRICT COURT CENTRAL DISTRICT OF CALIFORNIA CIVILITY AND PROFESSIONALISM GUIDELINES

Preamble

In its purest form, law is simply a societal mechanism for achieving justice. As officers of the court, judges and lawyers have a duty to use the law for this purpose, for the good of the people. Even though "justice" is a lofty goal, one which is not always reached, when an individual becomes a member of the legal profession, he or she is bound to strive towards this end.

gation costs and fails to advance the client's lawful interests. Perhaps just as importantly, this type of behavior causes the public to lose faith in the legal profession and its ability to benefit society. For these reasons, we find that civility and professionalism among advocates, between lawyer and client, and between bench and bar are essential to the administration of justice.

The following guidelines are de-

...there is a growing sense that lawyers regard their livelihood as a business, rather than a profession.

Unfortunately, many do not perceive that achieving justice is the function of law in society today. Among members of the public and lawyers themselves, there is a growing sense that lawyers regard their livelihood as a business, rather than a profession. Viewed in this manner, the lawyer may define his or her ultimate goal as "winning" any given case, by whatever means possible, at any cost, with little sense of whether justice is being served. This attitude manifests itself in an array of obstinate discovery tactics, refusals to accommodate the reasonable requests of opposing counsel re: dates, times, and places; and other needless, time-consuming conflicts between and among adversaries. This type of behavior tends to increase costs of litigation and often leads to the denial of jus-

The Central District recognizes that, while the majority of lawyers do not behave in the above-described manner, in recent years there has been a discernible erosion of civility and professionalism in our courts. This disturbing trend may have severe consequences if we do not act to reverse its course. Incivil behavior does not constitute effective advocacy; rather, it serves to increase liti-

signed to encourage us, the members of the bench and bar, to act towards each other, our clients, and the public with the dignity and civility that our profession demands. In formulating these guidelines, we have borrowed heavily from the efforts of others who have written similar codes for this same purpose. The Los Angeles County Bar Association Litigation Guidelines, guidelines issued by other county bar associations within the Central District, the Standards for Professional Conduct within the Seventh Federal Judicial Circuit, and the Texas Lawyer's Creed all provide excellent -models for professional behavior in the law.

We expect that judges and lawyers will voluntarily adhere to these standards as part of a mutual commitment to the elevation of the level of practice in our courts. These guidelines shall not be used as a basis for litigation or for sanctions or penalties.

Nothing in these guidelines supersedes or modifies the existing Local Rules of the Central District, nor do they alter existing standards of conduct wherein lawyer negligence may be determined and/or examined.

I. Guidelines

A. Lawyers' Duties to Their Clients

- We will practice our profession with a continuing awareness that our role is to advance the legitimate interests of our clients. We will endeavor to achieve our clients' lawful objectives in legal transactions and in litigation as quickly and economically as possible.
- We will be loyal and committed to our clients' lawful objectives, but we will not permit that loyalty and commitment to interfere with our duty to provide objective and independent advice.
- We will advise our clients that civility and courtesy are expected and are not a sign of weakness.
- 4. We will treat adverse parties and witnesses with fairness and due consideration. A client has no right to demand that we act in an abusive manner or indulge in any offensive conduct.
- We will advise our clients that we will not pursue conduct that is intended primarily to harass or drain the financial resources of the opposing party.
- 6. We will advise our clients that we reserve the right to determine whether to grant accommodations to opposing counsel in all matters that do not adversely affect our clients' lawful objectives. Clients have no right to instruct us to refuse reasonable requests made by other counsel.
- We will advise our clients regarding availability of mediation, arbitration, and other alternative meth-

- ods of resolving and settling disputes.
- We will advise our clients of the contents of this creed when undertaking representation.

B. Lawyers' Duties to Other Counsel

1. Communications with Adversaries

- a. We will adhere to all express promises and to agreements with other counsel, whether oral or in writing, and will adhere in good faith to all agreements implied by the circumstances or local customs.
- b: When we reach an oral understanding on a proposed agreement or a stipulation and decide to commit it to writing, the drafter will endeavor in good faith to state the oral understanding accurately and completely. The drafter will provide the other counsel with the opportunity to review the writing. As drafts are exchanged between or among counsel, changes from prior drafts will be identified in the draft or otherwise explicitly brought to the attention of other counsel. We will not · include in a draft matters to which there has been no agreement without explicitly advising other counsel in writing of the addition.
- c. We will not write letters for the purpose of ascribing to apposing counsel a position he or she has not taken, or to create "a record" of events that have not occurred. Letters intended only to make a record should he used sparingly and only when thought to be necessary under all of the circumstances. Unless specifically permitted or invited by the court, letters between counsel should not be sent to judges.

2. Scheduling Issues

- a. We will not use any form of discovery or discovery scheduling as a means of harassment.
- b. We will consult other counsel regarding scheduling matters in a good faith effort to avoid scheduling conflicts.
- c. We will endeavor to accommodate previously scheduled dates for hearings, depositions, meetings, conferences, vacations, seminars, or other functions that produce good faith calendar conflicts on the part of other counsel, where it is possible to do so without prejudicing the client's rights. If we have been given an accommodation because of a calendar conflict, we will notify those who have accommodated us as soon as the conflict has been removed.
- d. We will notify other counsel and, if appropriate, the court or other persons, at the earliest possible time when hearings, depositions, meetings, or conferences are to be canceled or postponed. Early notice avoids unnecessary travel and expense of counsel and may enable the court to use the previously reserved time for other matters.
- e. Unless time is of the essence, as a matter of courtesy we will grant first requests for reasonable extensions of time to respond to litigation deadlines. After a first extension, any additional requests for time will be considered by balancing the need for expedition against the deference one should ordinarily give to an opponent's schedule of personal and professional engagements, the reasonableness of the length of extension requested, the opponent's willingness to grant reciprocal extensions, the time actually needed for the task, and whether it is likely a court would grant the extension if asked to do so.

- f. We will not request an extension of time solely for the purpose of unjustified delay or to obtain a tactical advantage.
- g. We will not attach to extensions unfair and extraneous conditions. We may impose conditions for the purpose of preserving rights that an extension might jeopardize, or for seeking reciprocal scheduling concessions. We will not, by granting extensions, seek to preclude an opponent's substantive rights, such as his or her right to move against a complaint.

3. Service of Papers

- a. We will not time the filing or service of motions or pleadings in any way that unfairly limits another party's opportunity to respond.
- b. We will not serve papers sufficiently close to a court appearance so as to inhibit the ability of opposing counsel to prepare for that appearance or, where permitted by law, to respond to the papers.
- c. We will not serve papers in order to take advantage of an opponent's known absence from the office or at a time or in a manner designed to inconvenience an adversary, such as late on a Friday afternoon or the day preceding a secular or religious holiday.
- d. When it is likely that service by mail, even when allowed, will-prejudice the opposing party, we will effect service personally or by facsimile transmission.

4. Depositions

 We will take depositions only when actually needed to ascertain facts or information or to perpetuate testimony. We will not take depositions for the purpose of harassment or to increase litigation expense.

- b. We will not engage in any conduct during a deposition that would be inappropriate in the presence of a judge.
- c. During depositions we will ask only those questions we reasonably believe are necessary for the prosecution or defense of an action. We will not inquire into a deponent's personal affairs or question a deponent's integrity where such inquiry is irrelevant to the subject matter of the deposition. We will refrain from repetitive or argumentative questions or those asked solely for purposes of harassment.
- d. When defending a deposition, we will limit objections to those that are well founded and necessary to protect our client's interests. We recognize that most objections are preserved and need be interposed only when the form of a question is defective or privileged information is sought.
- When a question is pending, we will not, through objections or otherwise, coach the deponent or suggest answers
- f. We will not direct a deponent to refuse to answer questions unless they seek privileged information or are manifestly irrelevant or calculated to harass.
- g. When we obtain documents pursuant to a deposition subpoena, we will make copies of the documents available to opposing counsel at his or her expense, even if the deposition is canceled or adjourned.

5. Document Demands

 We will carefully craft document production requests so they are limited to those documents we reason-

- ably believe are necessary for the prosecution or defense of an action. We will not design production requests to harass or embarrass a party or witness or to impose an undue burden or expense in responding.
- b. We will respond to document requests in a timely and reasonable manner and not strain to interpret the request in an artificially restrictive manner to avoid disclosure of relevant and non-privileged documents.
- We will withhold documents on the grounds of privilege only where it is appropriate to do so.
- d. We will not produce documents in a disorganized or unintelligible manner, or in a way designed to hide or obscure the existence of particular documents.
- We will not delay document production to prevent opposing counsel from inspecting documents prior to scheduled depositions or for any other tactical reason.

Interrogatories

- a. We will carefully craft interrogatories so that they are limited to those matters we reasonably believe are necessary for the prosecution or defense of an action, and we will not design them to harass or place an undue burden or expense on a party.
- b. We will respond to interrogatories in a timely and reasonable manner and will not strain to interpret them in an artificially restrictive manner to avoid disclosure of relevant and non-privileged information.
- c. We will base our interrogatory objections on a good faith belief in their merit and not for the purpose of withholding or delaying the disclosure of relevant information. If

an interrogatory is objectionable in part, we will answer the unobjectionable part.

Settlement and Alternative Dispute Resolution

- a. Except where there are strong and overriding issues of principle, we will raise and explore the issue of settlement in every case as soon as enough is known about the case to make settlement discussion meaningful.
- b. We will not falsely hold out the possibility of settlement as a means for adjourning discovery or delaying trial.
- c. In every case, we will consider whether the client's interest could be adequately served and the controversy more expeditiously and economically disposed of by arbitration, mediation, or other forms of alternative dispute resolution.
- 8. Written Submissions to a Court, Including Briefs, Memoranda, Affidavits, Declarations, and Proposed Orders.
- a. Before filing a motion with the court, we will engage in more than a mere pro forma discussion of its purpose in an effort to resolve the issue with opposing counsel.
- We will not force our adversary to make a motion and then not oppose it.
- c. In submitting briefs or memoranda of points and authorities to the court, we will not rely on facts that are not properly part of the record. We may present historical, economic, or sociological data, if such data appears in or is derived from generally available sources.

- d. In civil actions, we will stipulate to relevant matters if they are undisputed and if no good faith advocacy hasis exists for not stipulating.
- Unless directly and necessarily in issue, we will not disparage the intelligence, morals, integrity, or personal behavior of our adversaries before the court, either in written submissions or oral presentations.
- We will not, absent good cause, attribute bad motives or improper conduct to other counsel or bring the profession into disrepute by unfounded accusations of impropriety.
- g. We will not move for court sanctions against opposing counsel without first conducting a reasonable investigation and unless fully justified by the circumstances and necessary to protect our client's lawful interests.
- We will not cause any default or dismissal to be entered without first notifying opposing counsel, when we know his or her identity.
- i. When a draft order is to be prepared by counsel to reflect a court ruling, we will draft an order that accurately and completely reflects the court's ruling. We will promptly prepare and submit a proposed order to other counsel and attempt to reconcile any differences before the draft order is presented to the court.

9. Ex Parte Communications With the Court

- a. We will avoid ex parte communication on the substance of a pending case with a judge (or his or her law elerk) before whom such case is pending.
- Even where applicable laws or rules permit an ex parte application or communication to the court, before making such an application or com-

- munication we will make diligent efforts to notify the opposing party or his or her attorney. We will make reasonable efforts to accommodate the schedule of such attorney, so that the opposing party may be represented on the application.
- c. Where the rules permit an ex parte application or communication to the court in an emergency situation, we will make such an application or communication only where there is a bona fide emergency such that the lawyer's client will be seriously prejudiced by a failure to make the application or communication on regular notice.

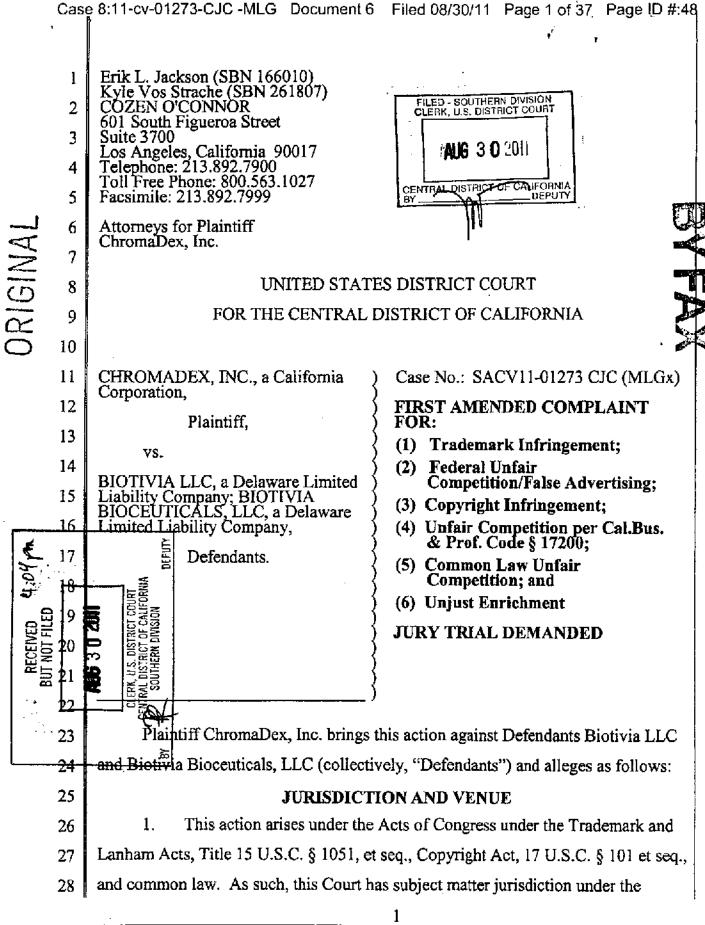
C. Lawyers' Duties to the Court

- We will speak and write civilly and respectfully in all communications with the court.
- We will be punctual and prepared for all court appearances so that all hearings, conferences, and trials may commence on time; if delayed, we will notify the court and counsel, if possible.
- We will be considerate of the time constraints and pressures on the court and court staff inherent in their efforts to administer justice.
- We will not engage in any conduct that brings disorder or disruption to the courtroom. We will advise our clients and witnesses appearing in court of the proper conduct expected and required there and, to the best of our ability, prevent our clients and witnesses from creating disorder or disruption.
- We will not write letters to the court in connection with a pending action, unless invited or permitted by the court.

- 6. Before dates for hearing or trials are set, or if that is not feasible, immediately after such date has been set, we will altempt to verify the availability of necessary participants and witnesses so we can promptly notify the court of any likely problems.
- We will act and speak civilly to courf marshals, court clerks, court reporters, secretaries, and law clerks with an awareness that they, too, are an integral part of the judicial system.

D. Judges' Duties to Others

- We will be courteous, respectful, and civil to the attorneys, parties, and witnesses who appear before us. Furthermore, we will use our authority to ensure that all of the attorneys, parties, and witnesses appearing in our courtrooms conduct themselves in a civil manner.
- We will do our best to ensure that court personnel act civilly toward attorneys, parties and witnesses.
- We will not employ abusive, demeaning, or humiliating language in opinions or in written or oral communications with attorneys, parties, or witnesses.
- We will be punctual in convening all hearings, meetings, and conferences.
- We will make reasonable efforts to decide promptly all matters presented to us for decision.
- While endeavoring to resolve disputes efficiently, we will be aware
 of the time constraints and pressures
 imposed on attorneys by the exigencies of litigation practice.
- Above all, we will remember that the court is the servant of the people, and we will approach our duties in this fashion.



provisions of Title 28 U.S.C. §§ 1331 and 1338 because this action involves federal questions of law. A substantial part of the events giving rise to this action have occurred and continue to occur in this judicial district. As such, this court has subject matter jurisdiction under the provisions of Title 28 U.S.C. §§ 1331 and 1338 because this action involves federal questions of law. A substantial part of the events giving rise to this action have occurred and continue to occur in this judicial district. As such, Defendants should reasonably expect that their activities might have consequences herein.

- 2. This Court has original jurisdiction over the claims brought under federal law pursuant to 28 U.S.C. §§ 1331 and 1338(b) and 15 U.S.C. § 1121.
- 3. This Court has supplemental jurisdiction over the claims in this Complaint that arise under state statutory and common law in the State of California pursuant to 28 U.S.C. §1367(a), because the state law claims are so related to the federal claims that they form part of the same case or controversy and derive from a common nucleus of operative facts.
- 4. This Court has personal jurisdiction over Defendants and each of them because they reside in the Central District of California, have a place of business within this judicial district and conduct substantial business within this judicial district related to the unlawful activity at issue in this Complaint.
- 5. Venue is proper in this court pursuant to 28 U.S.C. §1391 because Defendants reside in this judicial district, conducts business in this business district, and because a substantial part of the events or omissions giving rise to ChromaDex's claims occurred and are continuing to occur in this judicial district.

THE PARTIES

6. Plaintiff ChromaDex Inc. ("Plaintiff" or "ChromaDex") is a California corporation with its principal place of business at 10005 Muirlands, Suite G, Irvine, California 92618.

- 7. Upon information and belief, Defendant Biotivia LLC is a Delaware Limited Liability Company, with a principal place of business at 1 River Place, Ste. 1001, New York, NY 10036 and offices in Los Angeles, California.
- 8. 8. Upon information and belief, Defendant Biotivia Bioceuticals LLC is a Delaware Limited Liability Company, with a principal place of business at 1 River Place, Ste. 1001, New York, NY 10036 and offices in Los Angeles, California. Upon information and belief, Defendant Biotivia Bioceuticals LLC is a dba of or otherwise is directly affiliated with Biotivia LLC.

BACKGROUND AS TO CHROMADEX'S BUSINESS AND ITS INTELLECTUAL PROPERTY

- 9. ChromaDex was established in 1999 and is an innovative natural products company that provides proprietary, science-based solutions and ingredients to the dietary supplement, food and beverage, cosmetic and pharmaceutical industries.
- 10. On April 26, 2010, ChromaDex launched pTeroPure® Pterostilbene (hereafter PTEROPURE®), a proprietary, ultrapure formulation of the naturally occurring compound pterostilbene, found in blueberries. PTEROPURE® is a synthetic pterostilbene, which is a dietary supplement to support anti-aging, heart health, oxidative stress, and memory.
- 11. On June 13, 2011, ChromaDex launched BluScience, a line of dietary supplements which feature PTEROPURE®. The BluScience line of pterostilbene-based products is distributed through GNC at more than 7,300 locations throughout. the United States and via the internet.
- 12. ChromaDex is the owner of certain intellectual property rights, including numerous federally registered trademarks and copyrights, as well as common law trademark and copyright rights.
- 13. ChromaDex is the owner of trademark rights in and to the PTEROPURE®, CHROMADEX®, THE NEXT GENERATION RESVERATROL, BLUSCIENCE and BLUSCIENCE THE FUSION OF BLUEBERRIES AND

SCIENCE marks including the following registrations and applications with the United States Patent and Trademark Office:- U.S. Reg. No. 3932510 for pTeroPure for "Phytochemicals for use in the manufacturing of dietary supplements and nutritional products" in International Class 1 attached as Exhibit A;

- U.S. Reg. No 3999086 for CHROMADEX for "Chemical reagents for non-medical purposes; Chemical test kits for analytical measurement of raw material identify, potency and formulation consistency for laboratory or research use; Chemicals for use in industry and science; Chemicals for use in the biochemical and chemical industry; Assays for research purposes" in International Class 1, and for "Chemical, biochemical, biological and bacteriological research and analysis; Consulting in the field of product development in the field of chemicals; Development and establishment of testing specifications and procedures in the field of chemicals; Development and test of chemical production methods; Development of voluntary standards for chemicals; Executing of chemical analyses; Industrial research in the field of chemicals; Pharmaceutical research and development; Product research and development; Research and development and consultation related thereto in the field of chemicals; Testing of raw materials" in International Class 42 attached as Exhibit B;
- U.S. App. Serial No. 85193003 for THE NEXT GENERATION RESVERATROL for "Phytochemicals for use in the manufacturing of dietary supplements, nutritional supplements, nutritional beverages, pharmaceuticals and cosmetics," in International Class 1;
- U.S. App. Serial No. 85306142 for BLUSCIENCE for "Dietary and nutritional supplements," in International Class 5; and
- U.S. App. Serial No. 85306158 for BLUSCIENCE THE FUSION OF BLUEBERRIES AND SCIENCE (stylized) for "Dietary and nutritional supplements," in International Class 5.

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- Since at least March 11, 2010, ChromaDex has used the PTEROPURE® 14. trademark in commerce.
- ChromaDex has expended significant time, energy, and resources in the 15. protection and promotion of its PTEROPURE® mark.
- 16. Since at least October 1999, ChromaDex has used the CHROMADEX® trademark in commerce with regard to International class 001, and at least June 2000, in International class 042.
- ChromaDex has expended significant time, energy, and resources in the protection and promotion of its CHROMADEX® mark.
- ChromaDex filed for trademark registration under section 1B on December 8, 2010 for the mark THE NEXT GENERATION RESVERATROL. The mark is currently in use on ChromaDex's website and is to be published for opposition on August 23, 2011.
- ChromaDex filed for trademark registration under section 1B for the mark 19. BLUSCIENCE on April 27, 2011.
- 20. ChromaDex filed for trademark registration under section 1B for the mark BLUSCIENCE THE FUSION OF BLUEBERRIES AND SCIENCE on April 27, 2011.
- 21. ChromaDex uses the BLUSCIENCE and BLUSCIENCE THE FUSION OF BLUEBERRIES AND SCIENCE marks on its website, chromadex.com, in connection with the advertising and sale of its BluScience line of products, all of which utilize the PTEROPURE®.
- 22. ChromaDex is the owner of certain copyrighted works including as relevant here:
- U.S. Copyright Reg. No. TXu001746330 for a work entitled "pTeroPure Brochure;" attached as Exhibit C; and

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- U.S. Copyright Reg. No. TXu001745172 for a work entitled "pTteroPure Pterostilbene: The Next Generation Resveratrol (Complete Presentation)," attached as Exhibit D.

DEFENDANTS' UNLAWFUL CONDUCT

- 23. Defendants own and operate at least two websites which target the United States market, Biotivialabs.com and Biotivia.com ("Biotivia Websites").
- 24. Defendants sell various nutraceutical supplements on the Biotivia Websites and through other third-party stores such as drugstores and other vendors of dietary supplements. Defendants' products are available for purchase both from internet websites and at local third-party stores.
- 25. The Biotivia Websites are active websites through which Defendants solicit business throughout the United States, and sell products to consumers throughout the United States, including consumers in the Central District of California.
- 26. In or about December 2010, via the Biotivia Websites, Defendants began advertising and selling a product called PteroMax that contains pterostilbene.
- 27. Defendants' PteroMax product directly competes with ChromaDex's BluScience line of products.
- 28. No association or relationship exists between ChromaDex and Defendants.
- 29. The PteroMax product sold by Defendants is not manufactured or affiliated in any way with ChromaDex, PTEROPURE® or ChromaDex's BluScience line of products.

Defendants' False Advertising and Unfair Competition on its Websites

30. The Biotivia Websites contain numerous false and misleading statements regarding Defendants' PteroMax product which are intended to deceive the purchasing public and/or cause confusion with the purchasing public. Examples of

- m) Defendants falsely claim that PteroMax is the result of over four year of Defendants' research, testing and analysis;
- n) Defendants falsely claim that PteroMax has the highest antioxidant rating of any supplement ever tested, and more that double that of any competing pterostilbene product ever tested;
- o) Defendants falsely claim that PteroMax is the only pterostilbene supplement designed by health scientists to match the specific proportions and concentrations found to be most effective in published scientific studies;
- p) Defendants falsely claim that PteroMax contains the highest amount of pterostilbene in its product;
- q) Defendants falsely claim that dosages of less than 100 mg per capsule have not been shown effective in humans;
- r) Defendants falsely claim that no company or institution has more experience and expertise in the development and manufacturing of resveratrol than Defendants; and
- s) Defendants falsely state that their product, PteroActiv, is a "pure" pterostilbene and has something to do with SIRT1 activation.
- 31. Defendants also used PteroMax in connection with words and phrases similar to ChromaDex's THE NEXT GENERATION RESVERATROL mark on the Biotivia Websites.
- 32. Defendants uses their PteroMax name in connection with the phrase "Pterostilbene has been described as the taking Resveratrol to the next level" on the Biotivialabs.com website. Defendants also use the phrase "PteroMax, in many important ways, takes resveratrol to a new level," on the Biotivia.com website.
- 33. The combined use of the PteroMax name and the phrases incorporating "taking resveratrol to the next level," and "takes resveratrol to a new level" are likely to confuse consumers based on the similarity of the name and phrases to the PTEROPURE® and THE NEXT GENERATION RESVERATROL marks.

- 34. Defendants are unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks.
 - 35. Defendants' conduct is willful in nature.

Defendants' Conduct In Unlawfully Directing

Internet Users to Their Websites by Using ChromaDex's Trademarks

- 36. Defendants, without authorization, used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as ad keywords on various search engines so as to unlawfully deceive consumers into believing that there was an affiliation between ChromaDex and Defendants.
- 37. Defendants purchased keywords utilizing ChromaDex's marks to drive web traffic to its competing website to sell its products on at least Google.com, Ask.com, and Answer.com.
- 38. Defendants purchased several of ChromaDex's trademarks, including, inter alia, ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks, as keywords on internet search engines Google.com and Ask.com, among other internet search engines.
- 39. By purchasing ChromaDex's identical trademarked terms as keywords, Defendants are seeking to drive consumer traffic to its own websites through the unauthorized and infringing use of ChromaDex's marks. As a result, consumers are likely to be confused as to whether Defendants' PteroMax product is affiliated with ChromaDex and its products, including PTEROPURE®.
- 40. Defendants' purchase of ChromaDex's CHROMADEX®,
 PTEROPURE® and BLUSCIENCE marks as key ad words for the sale of products in
 the same fields is likely to cause confusion to consumers and constitutes trademark
 infringement.
- 41. In addition to the purchase of ChromaDex's marks as key ad words,
 Defendants used ChromaDex's CHROMADEX®, PTEROPURE® and
 BLUSCIENCE marks in their metadata with the intent to use the ChromaDex marks

 to drive ChromaDex customers to the Biotivia Websites through general internet searches.

- 42. Defendants' use of ChromaDex's marks in their metadata is likely to confuse consumers as to the source and affiliation of ChromaDex's products.
- 43. Defendants unlawfully used the CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in commerce in connection with the sale or advertising for the sale of Defendants' competing products. Such use in commerce in connection with the sale or advertising for Defendants' products was and is unauthorized.
- 44. Defendants are unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks.
 - 45. Defendants' conduct is willful in nature.

Defendants' Copyright Infringement of ChromaDex's Promotional Materials

- 46. In September 2010, ChromaDex emailed PTEROPURE® and pterostilbene materials, including a brochure, to Defendants. An updated and revised version of the PTEROPURE® brochure is accessible on the ChromaDex pTeroPure.com website.
- 47. The brochure sent to Defendants in September 2010 and the updated version on the ChromaDex website are protected by copyright.
- 48. As the owner of the United States Copyright Registration Nos. TXu001746339 and TXu001746330, ChromaDex has the exclusive right to reproduce, distribute, display, and prepare derivative works based on the copyrighted work. 17 U.S.C. §§ 106 and 113.
- 49. The Biotivia Websites contain statements regarding PteroMax, including how it was developed, how it is made, benefits of taking the supplement, and comparing the product to other similar products.
- 50. Many of the statements found on The Biotivia Websites were copied in whole or in part from ChromaDex's copyrighted works. For example, the ChromaDex copyrighted brochures contain the following statements:

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pTeroPure is a nature identical form of trans-pterostilbene. Pterostilbene is the next generation of resveratrol:

- a methylated resveratrol analog naturally found in berries
- superior biological activity
- better oral bioavailability
- metabolizes more slowly in the body, allowing more time for its antioxidant activities to act.

The Biotivia Website contains the following statements, among others, which reflect copying of the statements in the copyrighted ChromaDex materials:

Found in plants like blueberries, pterostilbenes have been a feature of Ayurvedic medicine for hundreds of years. The highlights of pterostilbenes are:

- a methylated resveratrol analog naturally found in berries
- superior biological activity
- better oral bioavailability
- metabolizes more slowly in the body.
- 51. Defendants have used ChromaDex's copyrighted materials, including the examples above, without ChromaDex's authorization or consent. Defendants used the materials to promote their competing pterostilbene and resveratrol products.
- 52. The continued use of ChromaDex's copyrighted materials on Defendants' websites has caused and is causing ChromaDex to suffer serious and substantial damages resulting from Defendants' acts of copyright infringement, and the damages are causing irreparable injury to ChromaDex for which there is no adequate remedy at law.

ChromaDex's Attempts to Have Defendants Cease Their Infringing Activity

- 53. In or about April 28, 2011, ChromaDex sent a letter to Defendants demanding that they cease the use of ChromaDex's intellectual property. To date, Defendants have failed to comply with ChromaDex's demands.
- 54. Defendants have not received authorization, a license, or any other authority to utilize any of ChromaDex's trademarks or other intellectual property for

any purpose, nor has ChromaDex acquiesced to Defendants' use of any of its intellectual property.

55. Defendants' infringing activities are likely to cause confusion or mistake among prospective consumers and are likely to mislead and/or deceive prospective consumers with respect to the origin and quality of ChromaDex's products.

FIRST CLAIM FOR RELIEF

Trademark Infringement under the Lanham Act -15 U.S.C. §1114 Against Biotivia LLC and Biotivia Bioceuticals, LLC

- 56. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 55, above.
- 57. Defendants own and operates at least two websites which target the United States market, Biotivialabs.com and Biotivia.com.
- 58. Defendants sell various nutraceutical supplements on the Biotivia Websites and through other third-party stores such as drugstores and other vendors of dietary supplements. Defendants' products are available for purchase both from internet websites and at local third-party stores.
- 59. The Biotivia Websites are active websites that solicit business throughout the United States, and sell products to consumers throughout the United States, including consumers in the Central District of California.
- 60. On or about December 2010, via the Biotivia Websites, Defendants began advertising and selling a product called PteroMax that contains pterostilbene.
- 61. Defendants' PteroMax product directly competes with ChromaDex's BluScience line of products.
- 62. No association or relationship exists between ChromaDex and Defendants.
- 63. The PteroMax product sold by Defendants is not manufactured or affiliated in any way with ChromaDex, PTEROPURE® or ChromaDex's BluScience line of products.

- 64. Defendants, without authorization, used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as ad keywords on various search engines so as to unlawfully deceive consumers into believing that there was and is an affiliation between ChromaDex and Defendants.
- 65. Defendants purchased keywords utilizing ChromaDex's marks to drive web traffic to its competing website to sell its products on at least Google.com, Ask.com, and Answer.com.
- 66. Defendants purchased several of ChromaDex's trademarks, including, inter alia, ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks, as keywords on internet search engines Google.com and Ask.com, among other internet search engines.
- 67. By purchasing ChromaDex's identical trademarked terms as keywords, Defendants are seeking to drive consumer traffic to its own website through the unauthorized and infringing use of ChromaDex's marks. As a result, consumers are likely to be confused as to whether PteroMax is affiliated with ChromaDex and with its ChromaDex's PTEROPURE®.
- 68. Defendants' purchase of ChromaDex's CHROMADEX®,
 PTEROPURE® and BLUSCIENCE marks as key ad words for the sale of products in
 the same fields is likely to cause confusion to consumers and constitutes trademark
 infringement.
- 69. In addition to the purchase of ChromaDex's marks as key ad words,
 Defendants used ChromaDex's CHROMADEX®, PTEROPURE® and
 BLUSCIENCE marks in its metadata with the intent to use the ChromaDex marks to
 drive ChromaDex customers to Defendants' website through general internet searches.
- 70. Defendants' use of ChromaDex's marks in Defendants' metadata is likely to confuse consumers as to the source and affiliation of ChromaDex's products.
- 71. Defendants unlawfully used the CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in commerce in connection with the sale or advertising for the

sale of Defendants' competing products. Such use in commerce in connection with the sale or advertising for Defendants' products was and is unauthorized.

- 72. The federal registrations of ChromaDex's CHROMADEX® and PTEROPURE® mark evidences ChromaDex's exclusive right to use its CHROMADEX® and PTEROPURE® marks in connection with Phytochemicals for use in the manufacturing of dietary supplements and nutritional products. 15 U.S.C. § 1115.
- 73. Defendants purchased ad words through Google and other internet search engines for ChromaDex's CHROMADEX® and PTEROPURE® marks.
- 74. Defendants used ChromaDex's CHROMADEX® and PTEROPURE® marks in their metadata with the intent to use the ChromaDex marks to drive ChromaDex customers to Defendants' Websites through general internet searches.
- 75. Defendants' wrongful and unauthorized use of the CHROMADEX® and PTEROPURE® marks as delineated above constitutes trademark infringement pursuant to 15 U.S.C. § 1114.
- 76. Defendants' unauthorized use of the CHROMADEX® and PTEROPURE® marks in connection with the sale of the competing PteroMax product is likely to cause confusion, or mistake, or to deceive as to the source, affiliation, or sponsorship with ChromaDex, in violation of 15 U.S.C. § 1051 et seq.
- 77. Defendants' use and adoption of ChromaDex's exact marks, which are utilized in the same field as ChromaDex's marks, constitutes infringement of ChromaDex's registered CHROMADEX® and PTEROPURE® marks, in violation of 15 U.S.C. §§ 1051 et seq., to the substantial and irreparable injury of the public and of ChromaDex's marks, business, reputation, and goodwill.
- 78. Defendants' conduct has caused and will continue to cause damage to ChromaDex in an amount to be proved at trial, and if not enjoined, will cause irreparable harm to ChromaDex for which there is no adequate remedy at law.

- 79. ChromaDex is further entitled to recover damages and to recover its other costs herein. Defendants will be irreparably harmed if the unlawful, fraudulent and unfair conduct is not stopped and damages are an insufficient remedy. Accordingly, ChromaDex is also entitled to injunctive relief against Defendants.
- 80. ChromaDex is further entitled to recover statutory damages, treble damages and attorneys' fees.

SECOND CLAIM FOR RELIEF

Unfair Competition/False Advertising Under the Lanham Act 15 U.S.C. §1125(a) against Defendants Biotivia LLC and Biotivia Bioceuticals, LLC

- 81. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 80, above.
- 82. Defendants own and operate at least two websites which target the United States market, Biotivialabs.com and Biotivia.com.
- 83. Defendants sell various nutraceutical supplements on the Biotivia Websites and through other third-party stores such as drugstores and other vendors of dietary supplements. Defendants' products are available for purchase both from internet websites and at local third-party stores.
- 84. The Biotivia Websites are active websites that are used by Defendants to solicit business throughout the United States and sell products to consumers throughout the United States, including consumers in the Central District of California.
- 85. In or about December 2010, via the Biotivia Websites, Defendants began advertising and selling a product called PteroMax that contains pterostilbene.
- 86. Defendants' PteroMax product directly competes with ChromaDex's BluScience line of products.
- 87. No association or relationship exists between ChromaDex and Defendants.

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- 88. The PteroMax product sold by Defendants is not manufactured or affiliated in any way with ChromaDex, PTEROPURE® or ChromaDex's BluScience line of products.
- 89. The Biotivia Websites contain numerous false and misleading statements regarding its PteroMax product and ChromaDex and its products which are intended to deceive the purchasing public and/or cause confusion with the purchasing public. Examples of the myriad false and misleading statements reflected on the Biotivia Websites include:
- a) Defendants falsely state that there is a partnership between ChromaDex and Defendants;
- b) Defendants falsely claim that PteroMax product was developed prior to the PTEROPURE® product;
- c) Defendants falsely claim that Defendants introduced the world to pterostilbene when there were at least 15 pterostilbene-based products on the market before the PteroMax product;
- d) Defendants falsely claim that the PTEROPURE® product was created "based on the Biotivia Labs' formulation for PteroMax";
- e) Defendants falsely claim that the PTEROPURE® formulation is a "weakened version" of the competing PteroMax;
- f) Defendants falsely claim that the price of PteroMax is substantially less than PTEROPURE®;
- g) Defendants falsely state that the PteroMax product has hundreds of times the amount of pterostilbene than what is contained in other pterostilbene supplements, including PTEROPURE®;
 - h) Defendants falsely state that PteroMax is 100% pure pterostilbene;
- i) Defendants falsely claim that PteroMax contains over 100 times the potency of competing supplements;

- j) Defendants falsely state that PteroMax is cheaper than other similar products;
 - k) Defendants falsely state that only PteroMax contains Polydatin;
- Defendants falsely state that more of the world's leading medical research institutions chose Defendants for human clinical trials than all other suppliers combined;
- m) Defendants falsely claim that PteroMax is the result of over four year of Defendants' researching, testing and analysis;
- n) Defendants falsely claim that PteroMax has the highest antioxidant rating of any supplement ever tested, and more that double that of any competing pterostilbene product ever tested;
- o) Defendants falsely claim that PteroMax is the only pterostilbene supplement designed by health scientists to match the specific proportions and concentrations found to be most effective in published scientific studies;
- p) Defendants falsely claim that PteroMax contains the highest amount of pterostilbene in its product;
- q) Defendants falsely claim that dosages of less than 100 mg per capsule have not been shown effective in humans;
- r) Defendants falsely claim that no company or institution has more experience and expertise in the development and manufacturing of resveratrol than Defendants; and
- s) Defendants falsely state that the product, PteroActiv, is a "pure" pterostilbene and has something to do with SIRT1 activation.
- 90. Defendants also used PteroMax in connection with words and phrases similar to ChromaDex's THE NEXT GENERATION RESVERATROL mark on the Biotivia Websites.
- 91. Defendants use their PteroMax name, in connection with the phrase, "Pterostilbene has been described as the taking Resveratrol to the next level," on its

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Biotivialabs.com website. Defendants also use the phrase "PteroMax, in many important ways, takes resveratrol to a new level," on the Biotivia.com website.

- The combined use of the PteroMax name and the phrases incorporating 92. "taking resveratrol to the next level," and "takes resveratrol to a new level" are likely to confuse consumers based on the similarity to the PTEROPURE® and THE NEXT GENERATION RESVERATROL marks.
- Defendants areunfairly competing with ChromaDex through the 93. unauthorized and unlawful use of ChromaDex's marks and through the use of false and misleading statements and copyright infringement alleged herein.
 - Defendants' conduct is willful in nature.
- Defendants, without authorization, used ChromaDex's CHROMADEX®, 95. PTEROPURE® and BLUSCIENCE marks as ad keywords on various search engines so as to unlawfully deceive consumers into believing that there was an affiliation between ChromaDex and Defendants.
- Defendants purchased keywords utilizing ChromaDex's marks to drive web traffic to its competing website to sell its products on at least Google.com, Ask.com, and Answer.com.
- Defendants purchased several of ChromaDex's trademarks, including, 97. inter alia, ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks, as keywords on internet search engines Google.com and Ask.com, among other internet search engines.
- By purchasing ChromaDex's identical trademarked terms as keywords, Defendants are seeking to drive consumer traffic to their own websites through the unauthorized and infringing use of ChromaDex's marks. As a result, consumers are likely to be confused as to whether PteroMax is affiliated with ChromaDex's PTEROPURE® and with ChromaDex in general.
- Defendants' purchase of ChromaDex's, CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as key ad words for the sale of products in

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the same fields as well as the false and misleading statements on the Biotivia Websites are likely to cause confusion to consumers and constitutes trademark infringement.

- 100. In addition to the purchase of ChromaDex's marks as key ad words, Defendants used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in their metadata with the intent to use the ChromaDex marks to drive ChromaDex customers to Defendants' website through general internet searches.
- 101. Defendants' use of ChromaDex's marks in their metadata and the false and misleading statements on the Biotivia Websites are likely to confuse consumers as to the source and affiliation of ChromaDex's products.
- 102. Defendants unlawfully used the CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in commerce in connection with the sale or advertising for the sale of Defendants' competing products. Such use in commerce in connection with the sale or advertising for Defendants' products was unauthorized.
- 103. Defendants are unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks and through the false and misleading statements set forth on the Biotivia Websites.
 - 104. Defendants' conduct is willful in nature.
- 105. Defendants' conduct is likely to cause confusion, or to cause mistake, or to deceive customers as to the nature of the goods, causing great harm to ChromaDex.
- 106. Defendants are unfairly benefiting from the false or intentionally misleading statements on its website and marketing materials to the detriment of ChromaDex.
- 107. ChromaDex has been damaged by these acts in an amount to be proven at trial.
- 108. ChromaDex will be irreparably harmed if the improper conduct is not stopped and damages are an insufficient remedy. ChromaDex is also entitled to injunctive and equitable relief against Defendants.

THIRD CLAIM FOR RELIEF

Copyright Infringement against Defendants Biotivia LLC and Biotivia Bioceuticals LLC

- 109. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 108, above.
- 110. Defendants without authorization copied portions, in whole or in part, of ChromaDex's copyright protected materials.
- 111. ChromaDex has registered the works in Exhibits C and D with the United States Copyright Office as reflected in the attached registrations.
- 112. ChromaDex has complied in all respects with 17 U.S.C. §§ 101 et seq., and secured the exclusive rights and privileges in and to the copyrights of the above reference works. ChromaDex is the rightful and sole owner of all rights, title, and interest in and to the copyrights and their respective works.
- 113. Defendants' conduct violates ChromaDex's exclusive rights as owners of the copyrights under 17 U.S.C. § 106.
- 114. Defendants' unauthorized use of ChromaDex's copyright-protected works on their websites constitutes copyright infringement under 17 U.S.C. § 101 et. seq.
- 115. As a direct and proximate result of Defendants' wrongful conduct, Defendants have realized and continue to realize profits and other benefits rightly belonging to ChromaDex.
- 116. ChromaDex seeks an award of damages pursuant to 17 U.S.C. §§ 504 and 505, including actual damages, or, in the alternative, statutory damages.
- 117. ChromaDex will be irreparably harmed if the infringing conduct is not stopped and damages are an insufficient remedy and as such is entitled to injunctive relief.
- 118. Upon information and belief, Defendants have engaged in willful infringement of the rights owned exclusively by ChromaDex, and ChromaDex is therefore, entitled to the maximum statutory damages available.

FOURTH CLAIM FOR RELIEF

Unfair Competition- CAL, BUS. & PROF. CODE §17200 et. seq. against Defendants Biotivia LLC and Biotivia Bioceuticals, LLC

- 119. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 118, above.
- 120. Defendants own and operate at two websites which target the United States market, Biotivialabs.com and Biotivia.com.
- 121. Defendants sell various nutraceutical supplements on the Biotivia Websites and through other third-party stores such as drugstores and other vendors of dietary supplements. Defendants' products are available for purchase both from internet websites and at local third-party stores.
- 122. The Biotivia Websites are active websites through which Defendants solicit business throughout the United States, and sell products to consumers throughout the United States, including consumers in the Central District of California.
- 123. In or about December 2010, via the Biotivia Websites, Defendants began advertising and selling a product called PteroMax that contains pterostilbene.
- 124. Defendants' PteroMax product directly competes with ChromaDex's BluScience line of products.
- 125. No association or relationship exists between ChromaDex and Defendants.
- 126. The PteroMax product sold by Defendants is not manufactured by ChromaDex or affiliated in any way with ChromaDex, PTEROPURE® or ChromaDex's BluScience line of products.
- 127. The Biotivia Websites contain numerous false and misleading statements regarding the PteroMax product which are intended to deceive the purchasing public and/or cause confusion with the purchasing public. Examples of the myriad false and misleading statements reflected on the Biotivia Websites include:

- n) Defendants falsely claim that PteroMax has the highest antioxidant rating of any supplement ever tested, and more that double that of any competing pterostilbene product ever tested;
- o) Defendants falsely claim that PteroMax is the only pterostilbene supplement designed by health scientists to match the specific proportions and concentrations found to be most effective in published scientific studies;
- p) Defendants falsely claim that PteroMax contains the highest amount of pterostilbene in the product;
- q) Defendants falsely claim that dosages of less than 100 mg per capsule have not been shown effective in humans:
- r) Defendants falsely claim that no company or institution has more experience and expertise in the development and manufacturing of resveratrol than Defendants; and
- s) Defendants falsely state that the product PteroActiv, is a "pure" pterostilbene and has something to do with SIRT1 activation.
- 128. Defendants also used PteroMax in connection with words and phrases similar to ChromaDex's THE NEXT GENERATION RESVERATROL mark on the Biotivia Websites.
- 129. Defendants use the PteroMax name in connection with the phrase, "Pterostilbene has been described as the taking Resveratrol to the next level," on its Biotivialabs.com website. Defendants also use the phrase "PteroMax, in many important ways, takes resveratrol to a new level," on *inter alia* the Biotivia.com website.
- 130. The combined use of the PteroMax name and the phrases incorporating "taking resveratrol to the next level," and "takes resveratrol to a new level" are likely to confuse consumers based on the similarity to the PTEROPURE® and THE NEXT GENERATION RESVERATROL marks.

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- 131. Defendants are unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks.
 - 132. Defendants' conduct is willful in nature.
- 133. Defendants, without authorization, used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as ad keywords on various search engines so as to unlawfully deceive consumers into believing that there was an affiliation between ChromaDex and Defendants.
- 134. Defendants purchased keywords utilizing ChromaDex's marks to drive web traffic to its competing website to sell its products on at least Google.com, Ask.com, and Answer.com.
- 135. Defendants purchased several of ChromaDex's trademarks, including, inter alia, ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks, as keywords on internet search engines Google.com and Ask.com, among other internet search engines.
- 136. By purchasing ChromaDex's identical trademarked terms as keywords, Defendants are seeking to drive consumer traffic to its own website through the unauthorized and infringing use of ChromaDex's marks. As a result, consumers are likely to be confused as to whether PteroMax is affiliated with ChromaDex's PTEROPURE®.
- 137. Defendants' purchase of ChromaDex' CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as key ad words for the sale of products in the same fields is likely to cause confusion to consumers and constitutes trademark infringement.
- 138. In addition to the purchase of ChromaDex's marks as key ad words. Defendants used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in its metadata with the intent to use the ChromaDex marks to drive ChromaDex customers to Defendants' websites through general internet searches.

- 139. Defendants' use of ChromaDex's marks in Defendants' metadata is likely to confuse consumers as to the source and affiliation of ChromaDex's products.
- 140. Defendants unlawfully used the CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in commerce in connection with the sale or advertising for the sale of Defendants' competing products. Such use in commerce in connection with the sale or advertising for Defendants' products was unauthorized.
- 141. Defendants are unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks.
 - 142. Defendants' conduct is willful in nature.
- 143. The acts and conduct of Defendants as alleged above constitute unfair competition as defined by California Business and Professions Code §17200 et. seq. as the conduct is unlawful, unfair and fraudulent.
- 144. The acts and conduct of Defendants are likely to cause confusion and mistake among customers and the public as to the origin or association of Defendants' infringing products.
- 145. Defendants' unlawful, unfair, and deceptive trade practices, and other conduct described above, constitutes unfair competition in violation of California Business and Professions Code §17200 et. seq.
- 146. ChromaDex will be irreparably harmed if the unlawful, fraudulent and unfair conduct is not stopped and damages are an insufficient remedy. As a result, ChromaDex is entitled to injunctive and equitable relief against Defendants.

FIFTH CLAIM FOR RELIEF

Common Law Unfair Competition against Defendants Biotivia LLC and Biotivia Bioceuticals, LLC

- 147. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 146 above.
- 148. The acts and conduct of Defendants as alleged above in this Complaint constitute unfair competition pursuant to the common law.

- 149. ChromaDex's marks are distinctive and were distinctive at the time of all acts alleged herein. As a result of ChromaDex's substantial investment, the ChromaDex marks have developed extensive goodwill in the market. Accordingly, the ChromaDex marks are extremely valuable to ChromaDex.
- 150. Defendants are not affiliated with or sponsored by ChromaDex and have not been authorized by ChromaDex to use any mark that is identical to the ChromaDex marks.
- 151. Defendants' activities complained of herein constitute willful and intentional tort, in derogation of ChromaDex's rights. Acts of unfair competition commenced and have continued in spite of the Defendants' knowledge that the use of the ChromaDex marks were and are in contravention of ChromaDex's rights.
- 152. ChromaDex's damages from the aforesaid unlawful actions of Defendants, to the extent ascertainable, have not yet been determined.
- 153. ChromaDex seeks attorney's fees and costs given the willful conduct of Defendants.
- 154. Defendants' actions were committed intentionally, maliciously, willfully and, wantonly. ChromaDex is entitled to an award of punitive damages.

SIXTH CLAIM FOR RELIEF

Unjust Enrichment against Defendants Biotivia LLC and Biotivia Bioceuticals, LLC

- 155. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 154 above.
- at ChromaDex's expense in violation of the common law of California.
- 157. ChromaDex has suffered and is continuing to suffer irreparable injury for which there is no adequate remedy at law.
 - 158. ChromaDex has been damaged in an amount to be proven at trial.

PRAYER FOR RELIEF

WHEREFORE, ChromaDex respectfully requests that the Court enter judgment against Defendants as follows:

- 1. That the Court issue temporary and permanent injunctive relief against Defendants and each of them and that Defendants, their officers, agents, representatives, servants; employees, attorneys, successors and assignees, and all others in active concert or participation with Defendants, and each of them, be enjoined and restrained from:
- a) using ChromaDex's trade names, trademarks, or copyrights in connection with the description, marketing, promotion, advertising, or sale of any of Defendants' products;
 - b) infringing ChromaDex's trademarks and service marks
 - c) infringing ChromaDex's copyrights;
- d) engaging in any acts or activities directly or indirectly calculated to infringe ChromaDex's CHROMADEX®, PTEROPURE®, BLUSCIENCE, and THE NEXT GENERATION RESVERATROL marks.
- e) otherwise competing unfairly with ChromaDex in any manner whatsoever;
- 2. That the Court award ChromaDex actual damages, liquidated damages, statutory damages and punitive damages, in amount to be proven at trial;
- 3. That the Court Order Defendants and each of them to account for an pay over to ChromaDex all profits received by Defendants and each of them from the unlawful acts, and for the unjust enrichment;
- 4. That the Court enter an order placing reasonable but effective restrictions on the future transactions and activities of Defendants and each of them so as to prevent fraud on the Court and so as to ensure the capacity of Defendants, and each of them, to pay, and the prompt payment of, any judgment entered against Defendants in this action;



pTeroPure

Reg. No. 3,932,510

CHROMADEX INC. (CALIFORNIA CORPORATION)

10005 MUIRLANDS SUITE G

Registered Mar. 15, 2011 IRVINE, CA 92618

Int. Cl.: 1

FOR: PHYTOCHEMICALS FOR USE IN THE MANUFACTURING OF DIETARY SUPPLE-MENTS AND NUTRITIONAL PRODUCTS, IN CLASS 1 (U.S. CLS. 1, 5, 6, 10, 26 AND 46).

TRADEMARK

FIRST USE 3-11-2010; IN COMMERCE 3-11-2010.

PRINCIPAL REGISTER

THE MARK CONSISTS OF STANDARD CHARACTERS WITHOUT CLAIM TO ANY PAR-

TICULAR FONT, STYLE, SIZE, OR COLOR.

SN 77-939,875, FILED 2-19-2010.

MARY BOAGNI, EXAMINING ATTORNEY



United States of America United States Batent and Trademark Office

CHROMADEX

Reg. No. 3,999,086

CHROMADEX INC. (CALIFORNIA CORPORATION)

Registered July 19, 2011 IRVINE, CA 92618

10005 MURLANDS SUITE G

Int. Cls.: 1 and 42

FOR: CHEMICAL REAGENTS FOR NON-MEDICAL PURPOSES; CHEMICAL TEST KITS FOR ANALYTICAL MEASUREMENT OF RAW MATERIAL IDENTITY, POTENCY AND FORMULATION CONSISTENCY FOR LABORATORY OR RESEARCH USE; CHEMICALS FOR USE IN INDUSTRY AND SCIENCE; CHEMICALS FOR USE IN THE BIOCHEMICAL

TRADEMARK

AND CHEMICAL INDUSTRY; ASSAYS FOR RESEARCH PURPOSES, IN CLASS 1 (U.S. CLS. 1, 5, 6, 10, 26 AND 46).

SERVICE MARK

PRINCIPAL REGISTER

FIRST USE 10-0-1999; IN COMMERCE 10-0-1999.

FOR: CHEMICAL, BIOCHEMICAL, BIOLOGICAL AND BACTERIOLOGICAL RESEARCH AND ANALYSIS; CONSULTING IN THE FIELD OF PRODUCT DEVELOPMENT IN THE FIELD OF CHEMICALS; DEVELOPMENT AND ESTABLISHMENT OF TESTING SPECIFIC ATIONS AND PROCEDURES IN THE FIELD OF CHEMICALS; DEVELOPMENT AND TEST OF CHEMICAL PRODUCTION METHODS; DEVELOPMENT OF VOLUNTARY STANDARDS FOR CHEMICALS; EXECUTING OF CHEMICAL ANALYSES; INDUSTRIAL RESEARCH IN THE FIELD OF CHEMICALS; PHARMACEUTICAL RESEARCH AND DEVELOPMENT: PRODUCT RESEARCH AND DEVELOPMENT; RESEARCH AND DEVELOPMENT AND CONSULTATION RELATED THERETO IN THE FIELD OF CHEMICALS; TESTING OF RAW

MATERIALS, IN CLASS 42 (U.S. CLS. 100 AND 101).

FIRST USE 6-0-2000; IN COMMERCE 6-0-2000.

THE MARK CONSISTS OF STANDARD CHARACTERS WITHOUT CLAIM TO ANY PAR-TICULAR FONT, STYLE, SIZE, OR COLOR.

SN 77-939,870, FILED 2-19-2010.

MARY BOAGNI, EXAMINING ATTORNEY



Certificate of Registration



This Certificate issued under the seal of the Copyright Office in accordance with title 17, United States Code, attests that registration has been made for the work identified below. The information on this certificate has been made a part of the Copyright Office records.

Register of Copyrights, United States of America

Registration Number TXu 1-746-330

Effective date of registration:

February 14, 2011

Title	
	pTeroPure Brochure
Completion/Publication • Year of Completion:	_
Author —	
- Author:	ChromaDex, Inc., dbs pTeroPure
Author Created:	text, compilation
Work made for hire:	Yes
Citizen of:	United States
Copyright claimant	
Copyright Claimant:	ChromaDex, Inc., dha pTeroPure
	10005 Muirlands Boulevard, Suite G, Irvine, CA, 92618, United States
Limitation of copyright cl	aim
Material excluded from this claim:	text, artwork
	text, compilation
Rights and Permissions	
Organization Name:	ChromaDex, Inc.
Telephone:	949-419-0288
Address:	10005 Muiriands Boulevard
	Suite G
	Irvine, CA 92618 United States
Certification ————	
Name:	Durrell Washington

Date: January 21, 2011

Certificate of Registration



This Certificate issued under the seal of the Copyright Office in accordance with title 17, United States Code, attests that registration has been made for the work identified below. The information on this certificate has been made a part of the Copyright Office records.

Register of Copyrights, United States of America

Registration Number
TXu 1-745-172

Effective date of registration:
January 14, 2011

Title · Title of Work: pTeroPure Pterostilbene: The Next Generation Resveratrol (Complete Presentation) Completion/Publication -Year of Completion; 2010 Author Author: ChromaDex, Inc., dba pTeroPure Author Crested: text, compilation Work made for hire: Yes Citizen of: United States Copyright claimant -Copyright Claimant: ChromaDex, Inc., dba pTeroPure 10005 Muirlands Boulevard, Suite G, Irvine, CA, 92618, United States Limitation of copyright claim — Material excluded from this claim: text, attwork New material included in claim: 2-dimensional artwork, compilation, text Rights and Permissions Organization Name: ChromaDex, Inc. Telephone: 949-419-0288 Address: 10005-Muirlands Boulevard Suite G Irvine, CA 92618 United States Certification

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1 2 3 4 5 6 7 8	Attorneys for Plaintiff ChromaDex Inc. UNITED STATES DISTRICT COURT	חבח
9	FOR THE CENTRAL DISTRICT OF CALIFORNIA	
10 11 12 13 14 15 16 17 18 19 20 21	CHROMADEX, INC., a California Corporation, Plaintiff, vs. BIOTIVIA BIOCEUTICALS, LLC, a Delaware Limited Liability Company, Defendant. SACV11-01273CICM Case No.:: COMPLAINT FOR (1) Trademark Infringement; Competition/False Advertising; (3) Copyright Infringement; (4) Unfair Competition per Cal.Bus. & Prof. Code § 17200; (5) Common Law Unfair Competition; and (6) Unjust Enrichment JURY TRIAL DEMANDED	(x)
22 23 24 25 26 27 28	Plaintiff ChromaDex, Inc. ("Chromadex") brings this action against Defendar Biotivia Bioceuticals, LLC ("Biotivia") and alleges as follows: JURISDICTION AND VENUE 1. This action arises under the Acts of Congress under the Trademark and Lanham Acts, Title 15 U.S.C. § 1051, et seq., Copyright Act, 17 U.S.C. § 101 et seq and common law. As such, this Court has subject matter jurisdiction under the	
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provisions of Title 28 U.S.C. §§ 1331 and 1338 because this action involves federal questions of law. A substantial part of the events giving rise to this action have occurred and continue to occur in this judicial district. As such, this court has subject matter jurisdiction under the provisions of Title 28 U.S.C. §§ 1331 and 1338 because this action involves federal questions of law. A substantial part of the events giving rise to this action have occurred and continue to occur in this judicial district. As such, Biotivia should reasonably expect that its activities might have consequences herein.

- 2. This Court has original jurisdiction over the claims brought under federal law pursuant to 28 U.S.C. §§ 1331 and 1338(b) and 15 U.S.C. § 1121.
- 3. This Court has supplemental jurisdiction over the claims in this Complaint that arise under state statutory and common law in the State of California pursuant to 28 U.S.C. §1367(a), because the state law claims are so related to the federal claims that they form part of the same case or controversy and derive from a common nucleus of operative facts.
- 4. This Court has personal jurisdiction over Biotivia because it resides in the Central District of California, has a place of business within this judicial district and conducts substantial business within this judicial district related to the unlawful activity at issue in this Complaint.
- 5. Venue is proper in this court pursuant to 28 U.S.C. §1391 because Biotivia resides in this judicial district, conducts business in this business district, and because a substantial part of the events or omissions giving rise to Chromadex's claims occurred and are continuing to occur in this judicial district.

THE PARTIES

6. Plaintiff ChromaDex Inc. ("Plaintiff" or "ChromaDex") is a California corporation with its principal place of business at 10005 Muirlands, Suite G, Irvine, California 92618.

7. Upon information and belief, Defendant Biotivia Bioceuticals, LLC ("Defendant" or "Biotivia") is a Delaware Limited Liability Company, with a principal place of business at 1 River Place, Ste. 1001, New York, NY 10036 and offices in Los Angeles, California.

BACKGROUND AS TO CHROMADEX'S BUSINESS AND ITS INTELLECTUAL PROPERTY

- 8. ChromaDex was established in 1999 and is an innovative natural products company that provides proprietary, science-based solutions and ingredients to the dietary supplement, food and beverage, cosmetic and pharmaceutical industries.
- 9. On April 26, 2010, ChromaDex launched pTeroPure® Pterostilbene (hereafter PTEROPURE®), a proprietary, ultrapure formulation of the naturally occurring compound pterostilbene, found in blueberries. PTEROPURE® is a synthetic pterostilbene, which is a dietary supplement to support anti-aging, heart health, oxidative stress, and memory.
- 10. On June 13, 2011, ChromaDex launched BluScience, a line of dietary supplements which feature PTEROPURE®. The BluScience line of pterostilbene-based products is distributed through GNC at more than 7,300 locations throughout the United States and via the internet.
- 11. ChromaDex is the owner of certain intellectual property rights, including numerous federally registered trademarks and copyrights, as well as common law trademark and copyright rights.
- 12. ChromaDex is the owner of trademark rights in and to the PTEROPURE®, CHROMADEX®, THE NEXT GENERATION RESVERATROL, BLUSCIENCE and BLUSCIENCE THE FUSION OF BLUEBERRIES AND SCIENCE marks including the following registrations and applications with the United States Patent and Trademark Office:- U.S. Reg. No. 3932510 for pTeroPure for "Phytochemicals for use in the manufacturing of dietary supplements and nutritional products" in International Class 1 attached as Exhibit A;

- U.S. Reg. No 3999086 for CHROMADEX for "Chemical reagents for non-medical purposes; Chemical test kits for analytical measurement of raw material identify, potency and formulation consistency for laboratory or research use; Chemicals for use in industry and science; Chemicals for use in the biochemical and chemical industry; Assays for research purposes" in International Class 1, and for "Chemical, biochemical, biological and bacteriological research and analysis; Consulting in the field of product development in the field of chemicals; Development and establishment of testing specifications and procedures in the field of chemicals; Development and test of chemical production methods; Development of voluntary standards for chemicals; Executing of chemical analyses; Industrial research in the field of chemicals; Pharmaceutical research and development; Product research and development; Research and development and consultation related thereto in the field of chemicals; Testing of raw materials" in International Class 42 attached as Exhibit B;
- U.S. App. Serial No. 85193003 for THE NEXT GENERATION RESVERATROL for "Phytochemicals for use in the manufacturing of dietary supplements, nutritional supplements, nutritional beverages, pharmaceuticals and cosmetics," in International Class 1;
- U.S. App. Serial No. 85306142 for BLUSCIENCE for "Dietary and nutritional supplements," in International Class 5; and
- U.S. App. Serial No. 85306158 for BLUSCIENCE THE FUSION OF BLUEBERRIES AND SCIENCE (stylized) for "Dietary and nutritional supplements," in International Class 5.
- 13. Since at least March 11, 2010, ChromaDex has used the PTEROPURE® trademark in commerce.
- 14. ChromaDex has expended significant time, energy, and resources in the protection and promotion of its PTEROPURE® mark.

- 15. Since at least October 1999, ChromaDex has used the CHROMADEX® trademark in commerce with regard to International class 001, and at least June 2000, in International class 042.
- 16. ChromaDex has expended significant time, energy, and resources in the protection and promotion of its CHROMADEX® mark.
- 17. ChromaDex filed for trademark registration under section 1B on December 8, 2010 for the mark THE NEXT GENERATION RESVERATROL. The mark is currently in use on ChromaDex's website and is to be published for opposition on August 23, 2011.
- 18. ChromaDex filed for trademark registration under section 1B for the mark BLUSCIENCE on April 27, 2011.
- 19. ChromaDex filed for trademark registration under section 1B for the mark BLUSCIENCE THE FUSION OF BLUEBERRIES AND SCIENCE on April 27, 2011.
- 20. ChromaDex uses the BLUSCIENCE and BLUSCIENCE THE FUSION OF BLUEBERRIES AND SCIENCE marks on its website, chromadex.com, in connection with the advertising and sale of its BluScience line of products, all of which utilize the PTEROPURE®.
- 21. ChromaDex is the owner of certain copyrighted works including as relevant here:
- U.S. Copyright Reg. No. TXu001746330 for a work entitled "pTeroPure Brochure;" attached as Exhibit C; and
- U.S. Copyright Reg. No. TXu001745172 for a work entitled "pTteroPure Pterostilbene: The Next Generation Resveratrol (Complete Presentation)," attached as Exhibit D.

BIOTIVIA'S UNLAWFUL CONDUCT

22. Biotivia owns and operates at least two websites which target the United States market, Biotivialabs.com and Biotivia.com ("Biotivia Websites").

- 23. Biotivia sells various nutraceutical supplements on the Biotivia Websites and through other third-party stores such as drugstores and other vendors of dietary supplements. Biotivia's products are available for purchase both from internet websites and at local third-party stores.
- 24. The Biotivia Websites are active websites through which Biotivia solicits business throughout the United States, and sells products to consumers throughout the United States, including consumers in the Central District of California.
- 25. In or about December 2010, via the Biotivia Websites, Biotivia began advertising and selling a product called PteroMax that contains pterostilbene.
- 26. Biotivia's PteroMax product directly competes with ChromaDex's BluScience line of products.
 - 27. No association or relationship exists between ChromaDex and Biotivia.
- 28. The PteroMax product sold by Biotivia is not manufactured or affiliated in any way with ChromaDex, PTEROPURE® or ChromaDex's BluScience line of products.

Biotivia's False Advertising and Unfair Competition on its Websites

- 29. The Biotivia Websites contain numerous false and misleading statements regarding its PteroMax product which are intended to deceive the purchasing public and/or cause confusion with the purchasing public. Examples of the myriad false and misleading statements reflected on Biotivia's Websites include:
- a) Biotivia falsely states that there is a partnership between ChromaDex and Biotivia;
- b) Biotivia falsely claims that its PteroMax product was developed prior to the PTEROPURE® product;
- c) Biotivia falsely claims that Biotivia introduced the world to pterostilbene when there were at least 15 pterostilbene-based products on the market before the PteroMax product;

- 36. Biotivia purchased keywords utilizing ChromaDex's marks to drive web traffic to its competing website to sell its products on at least Google.com, Ask.com, and Answer.com.
- 37. Biotivia purchased several of ChromaDex's trademarks, including, *inter alia*, ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks, as keywords on internet search engines Google.com and Ask.com, among other internet search engines.
- 38. By purchasing ChromaDex's identical trademarked terms as keywords, Biotivia is seeking to drive consumer traffic to its own websites through the unauthorized and infringing use of ChromaDex's marks. As a result, consumers are likely to be confused as to whether its PteroMax is affiliated with ChromaDex and its products, including PTEROPURE®.
- 39. Biotivia's purchase of ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as key ad words for the sale of products in the same fields is likely to cause confusion to consumers and constitutes trademark infringement.
- 40. In addition to the purchase of ChromaDex's marks as key ad words, Biotivia used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in its metadata with the intent to use the ChromaDex marks to drive ChromaDex customers to Biotivia's websites through general internet searches.
- 41. Biotivia's use of ChromaDex's marks in Biotivia's metadata is likely to confuse consumers as to the source and affiliation of ChromaDex's products.
- 42. Biotivia unlawfully used the CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in commerce in connection with the sale or advertising for the sale of Biotivia's competing products. Such use in commerce in connection with the sale or advertising for Biotivia's products was and is unauthorized.
- 43. Biotivia is unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks.
 - 44. Biotivia's conduct is willful in nature.

Biotivia's Copyright Infringement of ChromaDex's Promotional Materials

- 45. In September 2010, ChromaDex emailed PTEROPURE® and pterostilbene materials, including a brochure, to Biotivia. An updated and revised version of the PTEROPURE® brochure is accessible on the ChromaDex pTeroPure.com website.
- 46. The brochure sent to Biotivia in September 2010 and the updated version on the ChromaDex website are protected by copyright.
- 47. As the owner of the United States Copyright Registration Nos. TXu001746339 and TXu001746330, ChromaDex has the exclusive right to reproduce, distribute, display, and prepare derivative works based on the copyrighted work. 17 U.S.C. §§ 106 and 113.
- 48. The Biotivia Websites contain statements regarding PteroMax, including how it was developed, how it is made, benefits of taking the supplement, and comparing the product to other similar products.
- 49. Many of the statements found on Biotivia's website were copied in whole or in part from ChromaDex's copyrighted works. For example, the ChromaDex copyrighted brochures contain the following statements:

pTeroPure is a nature identical form of trans-pterostilbene. Pterostilbene is the next generation of resveratrol:

- a methylated resveratrol analog naturally found in berries
- superior biological activity
- better oral bioavailability
- metabolizes more slowly in the body, allowing more time for its antioxidant activities to act.

The Biotivia website contains the following statements, among others, which reflect copying of the statements in the copyrighted ChromaDex materials:

Found in plants like blueberries, pterostilbenes have been a feature of Ayurvedic medicine for hundreds of years. The highlights of pterostilbenes are:

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metabolizes more slowly in the body.

superior biological activity

better oral bioavailability

Biotivia has used ChromaDex's copyrighted materials, including the 50. examples above, without ChromaDex's authorization or consent. Biotivia used the materials to promote its competing pterostilbene and resveratrol products.

a methylated resveratrol analog naturally found in berries

51. The continued use of ChromaDex's copyrighted materials on Biotivia's website has caused and is causing ChromaDex to suffer serious and substantial damages resulting from the Biotivia's acts of copyright infringement, and the damages are causing irreparable injury to ChromaDex for which there is no adequate remedy at law.

ChromaDex's Attempts to Have Biotivia Cease Its Infringing Activity

- In or about April 28, 2011, ChromaDex sent a letter to Biotivia demanding that it cease its use of ChromaDex's intellectual property. To date, Biotivia has failed to comply with ChromaDex's demands.
- 53. Biotivia has not received authorization, a license, or any other authority to utilize any of ChromaDex's trademarks or other intellectual property for any purpose, nor has ChromaDex acquiesced to Biotivia's use of any of its intellectual property.
- 54. Biotivia's infringing activities are likely to cause confusion or mistake among prospective consumers and are likely to mislead and/or deceive prospective consumers with respect to the origin and quality of ChromaDex's products.

FIRST CLAIM FOR RELIEF

Trademark Infringement under the Lanham Act -15 U.S.C. §1114

- ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 54, above.
- Biotivia owns and operates at two websites which target the United States market, Biotivialabs.com and Biotivia.com.

- 57. Biotivia sells various nutraceutical supplements on the Biotivia's Websites and through other third-party stores such as drugstores and other vendors of dietary supplements. Biotivia's products are available for purchase both from internet websites and at local third-party stores.
- 58. The Biotivia Websites are active websites that solicit business throughout the United States, and sell products to consumers throughout the United States, including consumers in the Central District of California.
- 59. On or about December 2010, via the Biotivia Websites, Biotivia began advertising and selling a product called PteroMax that contains pterostilbene.
- 60. Biotivia's PteroMax product directly competes with ChromaDex's BluScience line of products.
 - 61. No association or relationship exists between ChromaDex and Biotivia.
- 62. The PteroMax product sold by Biotivia is not manufactured or affiliated in any way with ChromaDex, PTEROPURE® or ChromaDex's BluScience line of products.
- 63. Biotivia, without authorization, used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as ad keywords on various search engines so as to unlawfully deceive consumers into believing that there was and is an affiliation between ChromaDex and Biotivia.
- 64. Biotivia purchased keywords utilizing ChromaDex's marks to drive web traffic to its competing website to sell its products on at least Google.com, Ask.com, and Answer.com.
- 65. Biotivia purchased several of ChromaDex's trademarks, including, *interalia*, ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks, as keywords on internet search engines Google.com and Ask.com, among other internet search engines.
- 66. By purchasing ChromaDex's identical trademarked terms as keywords, Biotivia is seeking to drive consumer traffic to its own website through the

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unauthorized and infringing use of ChromaDex's marks. As a result, consumers are likely to be confused as to whether PteroMax is affiliated with ChromaDex and with its ChromaDex's PTEROPURE®.

- 67. Biotivia's purchase of ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as key ad words for the sale of products in the same fields is likely to cause confusion to consumers and constitutes trademark infringement.
- 68. In addition to the purchase of ChromaDex's marks as key ad words, Biotivia used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in its metadata with the intent to use the ChromaDex marks to drive ChromaDex customers to Biotivia's website through general internet searches.
- 69. Biotivia's use of ChromaDex's marks in Biotivia's metadata is likely to confuse consumers as to the source and affiliation of ChromaDex's products.
- 70. Biotivia unlawfully used the CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in commerce in connection with the sale or advertising for the sale of Biotivia's competing products. Such use in commerce in connection with the sale or advertising for Biotivia's products was and is unauthorized.
- 71. The federal registrations of ChromaDex's CHROMADEX® and PTEROPURE® mark evidences ChromaDex's exclusive right to use its CHROMADEX® and PTEROPURE® marks in connection with Phytochemicals for use in the manufacturing of dietary supplements and nutritional products. 15 U.S.C. § 1115.
- 72. Biotivia purchased ad words through Google and other internet search engines for ChromaDex's CHROMADEX® and PTEROPURE® marks.
- 73. Biotivia used ChromaDex's CHROMADEX® and PTEROPURE® marks in its metadata with the intent to use the ChromaDex marks to drive ChromaDex customers to Biotivia's website through general internet searches.

- 74. Biotivia's wrongful and unauthorized use of the CHROMADEX® and PTEROPURE® marks as delineated above constitutes trademark infringement pursuant to 15 U.S.C. § 1114.
- 75. Biotivia's unauthorized use of the CHROMADEX® and PTEROPURE® marks in connection with the sale of the competing PteroMax product is likely to cause confusion, or mistake, or to deceive as to the source, affiliation, or sponsorship with ChromaDex, in violation of 15 U.S.C. § 1051 et seq.
- 76. Biotivia's use and adoption of ChromaDex's exact marks, which are utilized in the same field as ChromaDex's marks, constitutes infringement of ChromaDex's registered CHROMADEX® and PTEROPURE® marks, in violation of 15 U.S.C. §§ 1051 et seq., to the substantial and irreparable injury of the public and of ChromaDex's marks, business, reputation, and goodwill.
- 77. Biotivia's conduct has caused and will continue to cause damage to ChromaDex in an amount to be proved at trial, and if not enjoined, will cause irreparable harm to ChromaDex for which there is no adequate remedy at law.
- 78. ChromaDex is further entitled to recover damages and to recover its other costs herein. Biotivia will be irreparably harmed if the unlawful, fraudulent and unfair conduct is not stopped and damages are an insufficient remedy. Accordingly, ChromaDex is also entitled to injunctive relief against Biotivia.
- 79. ChromaDex is further entitled to recover statutory damages, treble damages and attorneys' fees.

SECOND CLAIM FOR RELIEF

Unfair Competition/False Advertising Under the Lanham Act 15 U.S.C. §1125(a)

80. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 79, above.

- 81. Biotivia owns and operates at least two websites which target the United States market, Biotivialabs.com and Biotivia.com.
- 82. Biotivia sells various nutraceutical supplements on the Biotivia Websites and through other third-party stores such as drugstores and other vendors of dietary supplements. Biotivia's products are available for purchase both from internet websites and at local third-party stores.
- 83. The Biotivia Websites are active websites that are used by Biotivia to solicit business throughout the United States and sell products to consumers throughout the United States, including consumers in the Central District of California.
- 84. In or about December 2010, via the Biotivia Websites, Biotivia began advertising and selling a product called PteroMax that contains pterostilbene.
- 85. Biotivia's PteroMax product directly competes with ChromaDex's BluScience line of products.
 - 86. No association or relationship exists between ChromaDex and Biotivia.
- 87. The PteroMax product sold by Biotivia is not manufactured or affiliated in any way with ChromaDex, PTEROPURE® or ChromaDex's BluScience line of products.
- 88. The Biotivia Websites contain numerous false and misleading statements regarding its PteroMax product and ChromaDex and its products which are intended to deceive the purchasing public and/or cause confusion with the purchasing public. Examples of the myriad false and misleading statements reflected on Biotivia's Websites include:
- a) Biotivia falsely states that there is a partnership between ChromaDex and Biotivia;
- b) Biotivia falsely claims that PteroMax product was developed prior to the PTEROPURE® product;

. . . .

- o) Biotivia falsely claims that PteroMax is the only pterostilbene supplement designed by health scientists to match the specific proportions and concentrations found to be most effective in published scientific studies;
- p) Biotivia falsely claims that PteroMax contains the highest amount of pterostilbene in its product;
- q) Biotivia falsely claims that dosages of less than 100 mg per capsule have not been shown effective in humans;
- r) Biotivia falsely claims that no company or institution has more experience and expertise in the development and manufacturing of resveratrol than Biotivia; and
- s) Biotivia falsely states that its product, PteroActiv, is a "pure" pterostilbene and has something to do with SIRT1 activation.
- 89. Biotivia also used PteroMax in connection with words and phrases similar to ChromaDex's THE NEXT GENERATION RESVERATROL mark on Biotivia's Websites.
- 90. Biotivia uses its PteroMax name, in connection with the phrase, "Pterostilbene has been described as the taking Resveratrol to the next level," on its Biotivialabs.com website. Biotivia also uses the phrase "PteroMax, in many important ways, takes resveratrol to a new level," on its Biotivia.com website.
- 91. The combined use of the PteroMax name and the phrases incorporating "taking resveratrol to the next level," and "takes resveratrol to a new level" are likely to confuse consumers based on the similarity to the PTEROPURE® and THE NEXT GENERATION RESVERATROL marks.
- 92. Biotivia is unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks and through the use of false and misleading statements and copyright infringement alleged herein.
 - 93. Biotivia's conduct is willful in nature.

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- 94. Biotivia, without authorization, used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as ad keywords on various search engines so as to unlawfully deceive consumers into believing that there was an affiliation between ChromaDex and Biotivia.
- 95. Biotivia purchased keywords utilizing ChromaDex's marks to drive web traffic to its competing website to sell its products on at least Google.com, Ask.com, and Answer.com.
- 96. Biotivia purchased several of ChromaDex's trademarks, including, *interalia*, ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks, as keywords on internet search engines Google.com and Ask.com, among other internet search engines.
- 97. By purchasing ChromaDex's identical trademarked terms as keywords, Biotivia is seeking to drive consumer traffic to its own websites through the unauthorized and infringing use of ChromaDex's marks. As a result, consumers are likely to be confused as to whether PteroMax is affiliated with ChromaDex's PTEROPURE® and with ChromaDex in general.
- 98. Biotivia's purchase of ChromaDex's, CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as key ad words for the sale of products in the same fields as well as the false and misleading statements on the Biotivia Websites are likely to cause confusion to consumers and constitutes trademark infringement.
- 99. In addition to the purchase of ChromaDex's marks as key ad words, Biotivia used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in its metadata with the intent to use the ChromaDex marks to drive ChromaDex customers to Biotivia's website through general internet searches.
- 100. Biotivia's use of ChromaDex's marks in Biotivia's metadata and the false and misleading statements on the Biotivia Websites are likely to confuse consumers as to the source and affiliation of ChromaDex's products.

- 101. Biotivia unlawfully used the CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in commerce in connection with the sale or advertising for the sale of Biotivia's competing products. Such use in commerce in connection with the sale or advertising for Biotivia's products was unauthorized.
- 102. Biotivia is unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks and through the false and misleading statements set forth on the Biotivia Websites.
 - 103. Biotivia's conduct is willful in nature.
- 104. Biotivia's conduct is likely to cause confusion, or to cause mistake, or to deceive customers as to the nature of the goods, causing great harm to ChromaDex.
- 105. Biotivia is unfairly benefiting from the false or intentionally misleading statements on its website and marketing materials to the detriment of ChromaDex.
- 106. ChromaDex has been damaged by these acts in an amount to be proven at trial.
- 107. ChromaDex will be irreparably harmed if the improper conduct is not stopped and damages are an insufficient remedy. ChromaDex is also entitled to injunctive and equitable relief against Biotivia.

THIRD CLAIM FOR RELIEF

Copyright Infringement -

- 108. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 107, above.
- 109. Biotivia without authorization copied portions, in whole or in part, of ChromaDex's copyright protected materials.
- 110. ChromaDex has registered the works in Exhibits C and D with the United States Copyright Office as reflected in the attached registrations.
- 111. ChromaDex has complied in all respects with 17 U.S.C. §§ 101 et seq., and secured the exclusive rights and privileges in and to the copyrights of the above

reference works. ChromaDex is the rightful and sole owner of all rights, title, and interest in and to the copyrights and their respective works.

- 112. Biotivia's conduct violates ChromaDex's exclusive rights as owners of the copyrights under 17 U.S.C. § 106.
- 113. Biotivia's unauthorized use of ChromaDex's copyright-protected works on Biotivia's websites constitutes copyright infringement under 17 U.S.C. § 101 et. seq.
- 114. As a direct and proximate result of Biotivia's wrongful conduct, Biotivia has realized and continue to realize profits and other benefits rightly belonging to ChromaDex.
- 115. ChromaDex seeks an award of damages pursuant to 17 U.S.C. §§ 504 and 505, including actual damages, or, in the alternative, statutory damages.
- 116. ChromaDex will be irreparably harmed if the infringing conduct is not stopped and damages are an insufficient remedy and as such is entitled to injunctive relief.
- 117. Upon information and belief, Biotivia has engaged in willful infringement of the rights owned exclusively by ChromaDex, and ChromaDex is therefore, entitled to the maximum statutory damages available.

FOURTH CLAIM FOR RELIEF

Unfair Competition- CAL. BUS. & PROF. CODE §17200 et. seq.

- 118. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 117, above.
- 119. Biotivia owns and operates at two websites which target the United States market, Biotivialabs.com and Biotivia.com.
- 120. Biotivia sells various nutraceutical supplements on the Biotivia's Websites and through other third-party stores such as drugstores and other vendors of dietary supplements. Biotivia's products are available for purchase both from internet websites and at local third-party stores.

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- s) Biotivia falsely states that its product, PteroActiv, is a "pure" pterostilbene and has something to do with SIRT1 activation.
- 127. Biotivia also used PteroMax in connection with words and phrases similar to ChromaDex's THE NEXT GENERATION RESVERATROL mark on Biotivia's Websites.
- 128. Biotivia uses its PteroMax name in connection with the phrase, "Pterostilbene has been described as the taking Resveratrol to the next level," on its Biotivialabs.com website. Biotivia also uses the phrase "PteroMax, in many important ways, takes resveratrol to a new level," on its Biotivia.com website.
- 129. The combined use of the PteroMax name and the phrases incorporating "taking resveratrol to the next level," and "takes resveratrol to a new level" are likely to confuse consumers based on the similarity to the PTEROPURE® and THE NEXT GENERATION RESVERATROL marks.
- 130. Biotivia is unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks.
 - 131. Biotivia's conduct is willful in nature.
- 132. Biotivia, without authorization, used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as ad keywords on various search engines so as to unlawfully deceive consumers into believing that there was an affiliation between ChromaDex and Biotivia.
- 133. Biotivia purchased keywords utilizing ChromaDex's marks to drive web traffic to its competing website to sell its products on at least Google.com, Ask.com, and Answer.com.
- 134. Biotivia purchased several of ChromaDex's trademarks, including, inter alia, ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks, as keywords on internet search engines Google.com and Ask.com, among other internet search engines.

- 135. By purchasing ChromaDex's identical trademarked terms as keywords, Biotivia is seeking to drive consumer traffic to its own website through the unauthorized and infringing use of ChromaDex's marks. As a result, consumers are likely to be confused as to whether PteroMax is affiliated with ChromaDex's PTEROPURE®.
- 136. Biotivia's purchase of ChromaDex' CHROMADEX®, PTEROPURE® and BLUSCIENCE marks as key ad words for the sale of products in the same fields is likely to cause confusion to consumers and constitutes trademark infringement.
- 137. In addition to the purchase of ChromaDex's marks as key ad words, Biotivia used ChromaDex's CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in its metadata with the intent to use the ChromaDex marks to drive ChromaDex customers to Biotivia's website through general internet searches.
- 138. Biotivia's use of ChromaDex's marks in Biotivia's metadata is likely to confuse consumers as to the source and affiliation of ChromaDex's products.
- 139. Biotivia unlawfully used the CHROMADEX®, PTEROPURE® and BLUSCIENCE marks in commerce in connection with the sale or advertising for the sale of Biotivia's competing products. Such use in commerce in connection with the sale or advertising for Biotivia's products was unauthorized.
- 140. Biotivia is unfairly competing with ChromaDex through the unauthorized and unlawful use of ChromaDex's marks.
 - 141. Biotivia's conduct is willful in nature.
- 142. The acts and conduct of Biotivia as alleged above constitute unfair competition as defined by California Business and Professions Code §17200 et. seq. as the conduct is unlawful, unfair and fraudulent.
- 143. The acts and conduct of Biotivia are likely to cause confusion and mistake among customers and the public as to the origin or association of Biotivia's infringing products.

- 144. Biotivia's unlawful, unfair, and deceptive trade practices, and other conduct described above, constitutes unfair competition in violation of California Business and Professions Code §17200 et. seq.
- 145. ChromaDex will be irreparably harmed if the unlawful, fraudulent and unfair conduct is not stopped and damages are an insufficient remedy. As a result, ChromaDex is entitled to injunctive and equitable relief against Biotivia.

FIFTH CLAIM FOR RELIEF

Common Law Unfair Competition

- 146. ChromaDex realleges and incorporates by this reference each and every allegation set forth in paragraphs 1 through 145 above.
- 147. The acts and conduct of Biotivia as alleged above in this Complaint constitute unfair competition pursuant to the common law.
- 148. ChromaDex's marks are distinctive and were distinctive at the time of all acts alleged herein. As a result of ChromaDex's substantial investment, the ChromaDex marks have developed extensive goodwill in the market. Accordingly, the ChromaDex marks are extremely valuable to ChromaDex.
- 149. Biotivia is not affiliated with or sponsored by ChromaDex and has not been authorized by ChromaDex to use any mark that is identical to the ChromaDex marks.
- 150. Biotivia's activities complained of herein constitute willful and intentional tort, in derogation of ChromaDex's rights. Acts of unfair competition commenced and have continued in spite of the Biotivia's knowledge that the use of the ChromaDex marks were and are in contravention of ChromaDex's rights.
- 151. ChromaDex's damages from the aforesaid unlawful actions of Biotivia, to the extent ascertainable, have not yet been determined.
- 152. ChromaDex seeks attorney's fees and costs given the willful conduct of the Biotivia.

- 2. That the Court award ChromaDex actual damages, liquidated damages, statutory damages and punitive damages, in amount to be proven at trial;
- 3. That the Court Order Biotivia to account for an pay over to ChromaDex all profits received by Biotivia from the unlawful acts, and for the unjust enrichment;
- 4. That the Court enter an order placing reasonable but effective restrictions on the future transactions and activities of Biotivia so as to prevent fraud on the Court and so as to ensure the capacity of Biotivias to pay, and the prompt payment of, any judgment entered against Biotivia in this action;
- 5. That the Court award ChromaDex its compensatory, incidental, and consequential damages;
- 6. That the Court award ChromaDex treble damages in an amount to be proven at trial;
- 7. That the Court award ChromaDex its attorneys' fees and costs incurred herein, including prejudgment and post judgment interest; and
- 8. That the Court grant ChromaDex all other relief to which it' is entitled and such other or additional relief as is just and proper under these circumstances.

DATED: August 24, 2011

COZEN-O'CONNOR

By:

ERIK L. JACKSON KYLE VOS STRACHE Attorneys for Plaintiff, CHROMADEX INC.

DEMAND FOR JURY TRIAL

ChromaDex demands a trial by jury on all triable issues of fact.

By:

3 | 4 | DATED: August 24, 2011

COZEN O'CONNOR

Attorneys for Plaintiff, CHROMADEX INC.

Anited States of America United States Patent and Trademark Office

pTeroPure

Reg. No. 3,932,510

CHROMADEX INC. (CALIFORNIA CORPORATION)

10005 MUIRLANDS SUITE G

Registered Mar. 15, 2011 IRVINE, CA 92618

Int. Cl.: 1

FOR: PHYTOCHEMICALS FOR USE IN THE MANUFACTURING OF DIETARY SUPPLE-

MENTS AND NUTRITIONAL PRODUCTS, IN CLASS 1 (U.S. CLS. 1, 5, 6, 10, 26 AND 46).

TRADEMARK

FIRST USE 3-11-2010; IN COMMERCE 3-11-2010.

PRINCIPAL REGISTER

THE MARK CONSISTS OF STANDARD CHARACTERS WITHOUT CLAIM TO ANY PAR-

TICULAR FONT, STYLE, SIZE, OR COLOR.

5N 77-939,875, FILED 2-19-2010.

MARY BOAGNI, EXAMINING ATTORNEY



United States of America United States Batent and Trademark Office

CHROMADEX

Reg. No. 3,999,086

CHROMADEX INC. (CALIFORNIA CORPORATION)

10005 MURLANDS SUITE G

Registered July 19, 2011 IRVINE, CA 92618

Int. Cls.: 1 and 42

FOR: CHEMICAL REAGENTS FOR NON-MEDICAL PURPOSES; CHEMICAL TEST KITS FOR ANALYTICAL MEASUREMENT OF RAW MATERIAL IDENTITY, POTENCY AND FORMULATION CONSISTENCY FOR LABORATORY OR RESEARCH USE; CHEMICALS

FOR USE IN INDUSTRY AND SCIENCE; CHEMICALS FOR USE IN THE BIOCHEMICAL AND CHEMICAL INDUSTRY, ASSAYS FOR RESEARCH PURPOSES, IN CLASS 1 (U.S.

CLS. 1, 5, 6, 10, 26 AND 46).

TRADEMARK SERVICE MARK

PRINCIPAL REGISTER

FIRST USE 10-0-1999; IN COMMERCE 10-0-1999.

FOR: CHEMICAL, BIOCHEMICAL, BIOLOGICAL AND BACTERIOLOGICAL RÉSEARCH AND ANALYSIS; CONSULTING IN THE FIELD OF PRODUCT DEVELOPMENT IN THE FIELD OF CHEMICALS; DEVELOPMENT AND ESTABLISHMENT OF TESTING SPECIFIC ATIONS AND PROCEDURES IN THE FIELD OF CHEMICALS; DEVELOPMENT AND TEST OF CHEMICAL PRODUCTION METHODS: DEVELOPMENT OF VOLUNTARY STANDARDS FOR CHEMICALS, EXECUTING OF CHEMICAL ANALYSES, INDUSTRIAL RESEARCH IN THE FIELD OF CHEMICALS; PHARMACEUTICAL RESEARCH AND DEVELOPMENT: PRODUCT RESEARCH AND DEVELOPMENT, RESEARCH AND DEVELOPMENT AND CONSULTATION RELATED THERETO IN THE FIELD OF CHEMICALS; TESTING OF RAW MATERIALS, IN CLASS 42 (U.S. CLS, 100 AND 101).

FIRST USE 6-0-2000; IN COMMERCE 6-0-2000.

THE MARK CONSISTS OF STANDARD CHARACTERS WITHOUT CLAIM TO ANY PAR-TICULAR FONT, STYLE, SIZE, OR COLOR.

SN 77-939.870. FILED 2-19-2010.

MARY BOAGNI, EXAMINING ATTORNEY



Certificate of Registration



This Certificate issued under the seal of the Copyright Office in accordance with title 17, United States Code, attests that registration has been made for the work identified below. The information on this certificate has been made a part of the Copyright Office records.

Register of Copyrights, United States of America

Date: January 21, 2011

Registration Number TXu 1-746-330

Effective date of registration:

February 14, 2011

Title of Work:	pTeroPure Brochure
Completion/Publication - Year of Completion:	·
Author ———	
 Author: 	ChromaDex, Inc., dba pTeroPure
Author Created:	text, compilation
Work made for hire:	Yes
Citizen of:	United States
Limitation of copyright cla Material excluded from this claim:	the same of the sa
New material included in claim:	
Rights and Permissions	
Organization Name:	ChromaDex, Inc.
Telephone:	949-419-0288
Address:	10005 Muirlands Boulevard
	Suite G
	Irvine, CA 92618 United States
	•
Certification —————	·

Certificate of Registration



This Certificate issued under the seal of the Copyright Office in accordance with title 17, United States Code, attests that registration has been made for the work identified below. The information on this certificate has been made a part of the Copyright Office records.

Register of Copyrights, United States of America

Registration Number TXu 1-745-172

Effective date of registration:

January 14, 2011

Title	
Title of Work:	pTeroPure Pierostilbene: The Next Generation Resveratrol
	(Complete Presentation)
Completion/Publication -	
Year of Completion:	2010
Author ————	
• Author:	ChromaDex, Inc., dba pTeroPure
Author Created:	text, compilation
Work made for hire:	Yes
Citizen of:	United States
Copyright claimant	
	ChromaDex, Inc., dba pTeroPure
•	10005 Muirlands Boulevard, Suite G, Irvine, CA, 92618, United States
Limitation of copyright cla	aim ————————————————————————————————————
Material excluded from this claim:	
New material included in claim:	2-dimensional artwork, compilation, text
Rights and Permissions	
Organization Name:	ChromaDex, Inc.
Telephone:	949-419-0288
Address:	10005 Muirlands Boulevard
	Suite G
	Irvine, CA 92618 United States
Cortification	•

UNITED STATES DISTRICT COURT CENTRAL DISTRICT OF CALIFORNIA

NOTICE OF ASSIGNMENT TO UNITED STATES MAGISTRATE JUDGE FOR DISCOVERY

This case has been assigned to District Judge Cormac J. Carney and the assigned discovery Magistrate Judge is Marc Goldman.

The case number on all documents filed with the Court should read as follows:

	£	BACT	711 -	1273	CJC	(MLGx)	
	Pursuant to General Orderistrict of California, the Magnotions.			_			
A	all discovery related motions	shoul	ld be ne	oticed or	the cale	endar of th	e Magistrate Judge
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	opy of this notice must be served w. l, a copy of this notice must be serv				nplaint on	all defenda	nts (if a removal action is
Sub	sequent documents must be filed a	at the f	following	j location:			
L	Western Division 312 N. Spring St., Rm. G-B Los Angeles, CA 90012		411 We	rn Divisio est Fourth Ana, CA 92	St., Rm. 1		Eastern Division 3470 Twelfth St., Rm. 134 Riverside, CA 92501

Failure to file at the proper location will result in your documents being returned to you.

UNITED STATES DISTRICT COURT for the

CENTRAL	District of CALIFORNIA
CHROMADEX, INC., a California corporation	- } SACV11-01273CTCHIG
Plaintiff	-) - ACVII - UIZ/ JUICUMUM
BIOTIVIA BIOCEUTICALS, LLC, a Delaware Limited Limbility Company Defendant	Civil Action No.
SUMMONS	S IN A CIVIL ACTION
To: (Defendant's name and address) BIOTIVIA BIOCEUTICALS, LLC, a Delaware	corporation
•	•
A lawsuit has been filed against you.	
are the United States or a United States agency, or an P. 12 (a)(2) or (3) — you must serve on the plaintiff a	on you (not counting the day you received it) — or 60 days if you officer or employee of the United States described in Fed. R. Civ. in answer to the attached complaint or a motion under Rule 12 of motion must be served on the plaintiff or plaintiff's attorney,
If you fail to respond, judgment by default wi You also must file your answer or motion with the con	ll be entered against you for the relief demanded in the complaint.
AUG 2 4 2011	CLERK OF COURT (SEAL)
Date:	JULIE PRADO
	Signature of Clerk or Deputy Clerk

Civil Action No.

PROOF OF SERVICE

(This section should not be filed with the court unless required by Fed. R. Civ. P. 4(1))

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			on (date)	
			usual place of abode with (name) of suitable age and discretion who res	
		•	the individual's last known address;	
	 .	•	of (name of organization)	
			OD (date)	; or
	I returned the summe	ons unexecuted because		; or
	Other (specify):		•	
	My fccs are \$	for travel and \$	for services, for a total of \$	
	I declare under penalty of	perjury that this information is	s true.	
Date:	· · · · · · · · · · · · · · · · · · ·			·
			Server's signature	
			Printed name and title	
			Server's address	

Additional information regarding attempted service, etc:

UNITED STATES DISTRICT COURT, CENTRAL DISTRICT OF CALIFORNIA

1 (a) PLAINTIFFS (Check b	ox if you are representing yourse	df 🗀)		FENDANTS				
CHROMADEX, INC	a California corpora	tion	lBi	BIOTIVIA BIOCEUTICALS, LLC, a Delaware				
				rporation				
			ب	iporation			-	
(b) Attorneys (Firm Name, Ad	esenting Att	omeys (If Known)						
yourself, provide same.)	-							
Erik L. Jackson, Stat		- .						
ejackson@cozen.con								
COZEN O'CONNOR								
601 South Figueroa Street, Suite 3700								
Los Angeles, CA 90								
Telephone: 213.892	./900							
II. BASIS OF JURISDICTI	ON (Place an X in one box only.))	III. CITIZI	ENSHIP OF PRIN	CIPAL PARTI	ES - For Diversity	/ Cases Only	
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CV-71 (05/08)

UNITED STATES DISTRICT COURT, CENTRAL DISTRICT OF CALIFORNIA CIVIL COVER SHEET

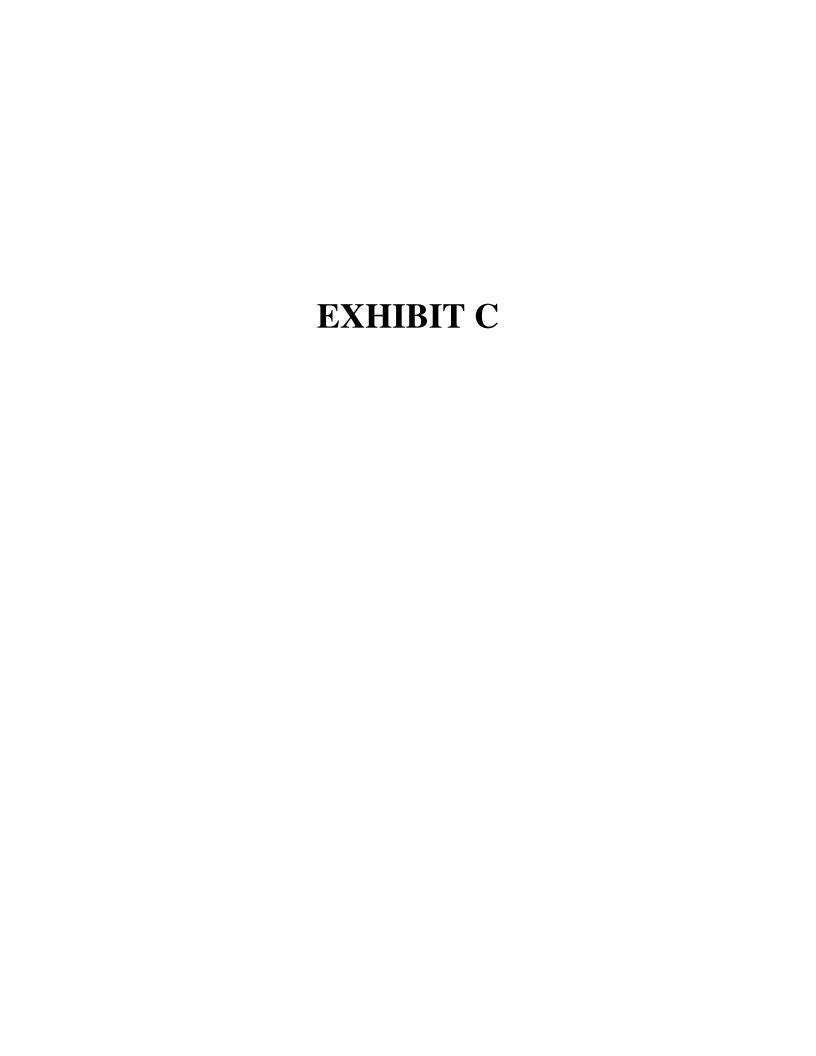
	S: Has this action b	een previously filed in this o	court and dismissed, remanded or closed? X No Yes				
If yes, list case number(s):							
VIII(b). RELATED CASES: If yes, list case number(s):	VIII(b). RELATED CASES: Have any cases been previously filed in this court that are related to the present case? X No Yes						
• • • • • • • • • • • • • • • • • • • •							
Civil cases are deemed related							
(Check all boxes that apply)	\equiv	-	ted transactions, happenings, or events; or				
	B. Call fo	r determination of the same	or substantially related or similar questions of law and fact; or				
	C. Far oth	ner reasons would entail subs	stantial duplication of labor if heard by different judges; or				
	D. Involve the same patent, trademark or copyright, and one of the factors identified above in a, b or c also is present.						
IX. VENUE: (When completing	g the following inf	ormation, use an additional s	sheet if necessary.)				
•			State if other than California; or Foreign Country, in which EACH named plaintiff resides.				
		-	intiff. If this box is checked, go to item (b).				
			California County outside of this District; State, if other than California; or Foreign Country				
County in this District:*	<u>-</u>	 ;	Camonia County outside of this District; State, it other than Camonia; or Foreign Country				
Orange County		<i>:</i>					
(b) List the County is this Dich	riote California Con	ante autoide of this District.	State if other than California, or Foreign Country, in which EACH named defendant resides.				
<u>`</u>	•	- ·	endant. If this box is checked, go to item (c).				
	ment, its agencies (or employees is a names den					
County in this District.*			California County outside of this District; State, if other than California; or Foreign Country				
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Orange County							
* Los Angeles Orange San Be	rnardino. Riversia	de Ventura Santa Barbar	a, or San Luis Obispo Counties				
Note: In land condemnation case			u, at 200 2004pc Countries				
V SCONIA TIME OF ATTORNEY	TY (OR DOO DED)		Date August 24, 2011				
X. SIGNATURE OF ATTORNI	Y (OK PRO PERA	ERIK L. JACKS					
Notice to Counsel/Parties: The CV-71 (IS-44) Civil Cover Sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law. This form, approved by the Judicial Conference of the United States in September 1974, is required pursuant to Local Rule 3-1 is not filed but is used by the Clerk of the Court for the purpose of statistics, venue and initiating the civil docket sheet. (For more detailed instructions, see separate instructions sheet.)							
Key to Statistical codes relating t	o Social Security C	ases:					
Nature of Suit Code	Abbreviation	Substantive Statement of	f Cause of Action				
. 861	ніа	All claims for health insurance benefits (Medicare) under Title 18, Part A, of the Social Security Act, as amended. Also, include claims by hospitals, skilled nursing facilities, etc., for certification as providers of services under the program. (42 U.S.C. 1935FF(b))					
862	BL	All claims for "Black Lung" benefits under Title 4, Part B, of the Federal Coal Mine Health and Safety Act of 1969. (30 U.S.C. 923)					
863	ĐIWC	All claims filed by insured workers for disability insurance benefits under Title 2 of the Social Security Act, as amended; plus all claims filed for child's insurance benefits based on disability. (42 U.S.C. 405(g))					
863	DIWW	All claims filed for widows or widowers insurance benefits based on disability under Title 2 of the Social Security Act, as amended. (42 U.S.C. 405(g))					
864	SSID	All claims for supplement Act, as amended.	al security income payments based upon disability filed under Title 16 of the Social Security				
865	RSI	All claims for retirement (old age) and survivors benefits under Title 2 of the Social Security Act, as amended. (42 U.S.C. (g))					

CIVIL COVER SHEET

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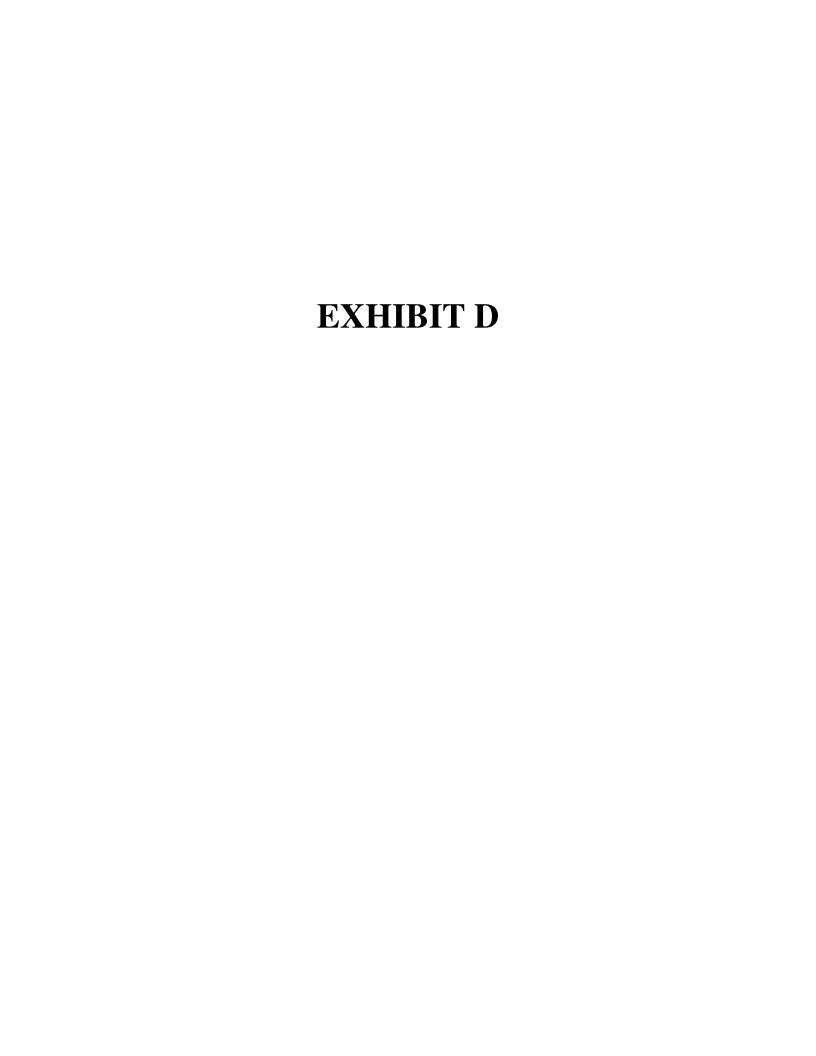
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Go US English

Definition of **next** in English

next

Syllabification: (next)
Pronunciation: /nekst/

Translate **next** | into French | into German | into Italian | into Spanish

adjective

1 (of a time or season) coming immediately after the time of writing or speaking:

we'll go next year

next week's parade

 (of a day of the week) nearest (or the nearest but one) after the present:

not this Wednesday, next Wednesday

[postpositive]:

on Monday next

 (of an event or occasion) occurring directly in time after the present or most recent one, without anything of the same kind intervening:

the next election

next time I'll bring a hat

 ${\bf 2}$ coming immediately after the present one in order, rank, or space:

the woman in the next room

the next chapter

building materials were next in importance

adverb

on the first or soonest occasion after the present; immediately afterward:

 $wondering\ what\ would\ happen\ next$

next, I heard the sound of voices

• [with superlative] following in the specified order: Joe was the next oldest after Martin

noun

the next person or thing:

one moment he wasn't there, the next he was

the week **after next**

preposition

archaic

next to:

More results for next

Cite

in the same or next breath us.Eng
next to us.Eng
what next us.Eng
next best us.Eng
next door us.Eng
next in line us.Eng

Result list for next

Word of the day

infographic

/ infō grafik

noun

a visual image such as a chart used to represent information ...

See full definition »

SIGN UP

1 of 3

he plodded along next him

Phrases

next in line

immediately below the present holder of a position in order of succession:

he is **next in line to** the throne

next to

- 1 in or into a position immediately to one side of; beside: we sat next to each other
- 2 following in order or importance: next to buying a whole new wardrobe, nothing lifts the spirits quite like a new hairdo!
- 3 almost:

Charles knew next to nothing about farming

4 in comparison with: next to her I felt like a fraud

the next world

(according to some religious beliefs) the place where one goes after death.

what next

an expression of surprise or amazement.

Origin:

Old English $n\bar{e}hsta$ 'nearest', superlative of $n\bar{e}ah$ 'nigh'; compare with Dutch naast and German $n\ddot{a}chste$

next in other Oxford dictionaries

Definition of next in the British & World English dictionary

Reference to **next** in Language Resources

- Onto or on to?
- 'Onto' or 'on to'?
- Prepositions
- Doublets
- Phrases
- · What is the origin of the word 'quiz'?

next, nearby words in English

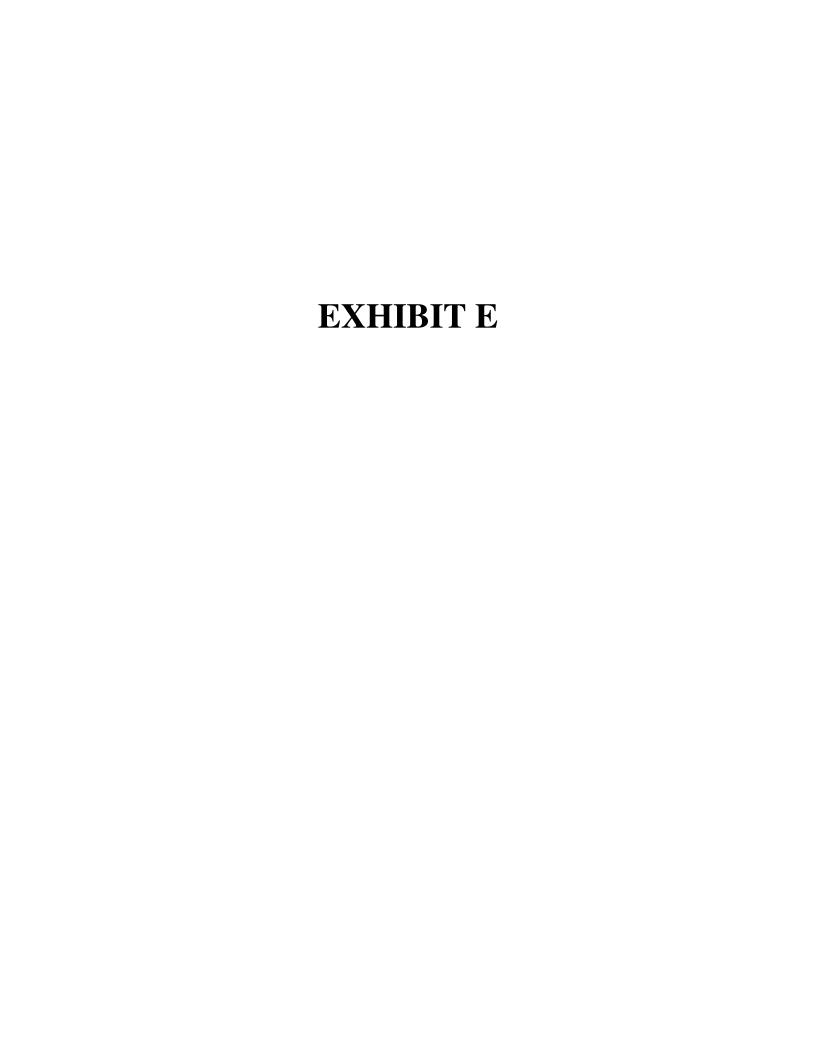
- Newtonian mechanics
- Newtonian telescope
- Newyorican
- NEX
- NEXRAD
- next
- next best
- next door
- next door to
- next in line

2 of 3

• next of kin

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3 of 3



Help Log in or Subscribe Dictionary Better writing World of words Puzzles and games Dictionary Language resources **US English**

Definition of **generation** in **English**

generation

Syllabification: (gen·er·a·tion) Pronunciation: /,jenə rāSHən/

Translate generation | into French | into German | into Italian | into Spanish

noun

1 all of the people born and living at about the same time, regarded collectively:

one of his generation's finest songwriters

- · the average period, generally considered to be about thirty years, during which children are born and grow up, become adults, and begin to have children of their own.
- · a set of members of a family regarded as a single step or stage in descent:

[as modifier, in combination]: a third-generation Canadian

- · a single stage in the development of a type of product: a new generation of rear-engined sports cars
- 2 the production of something:

methods of electricity generation

the generation of wealth

• the propagation of living organisms; procreation.

Derivatives

generational

Pronunciation: /-SHənl/ adjective

generationally

Pronunciation: /-SHənl-ē/ adverb

Origin:

Middle English: via Old French from Latin *generatio*(n-), from the verb generare (see GENERATE)

generation in other Oxford dictionaries

More results for generation

Cite

Generation X US. Eng Generation Y us. Eng me generation us. Eng beat generation us. Eng generation gap us. Eng Generation Xer us. Eng

Result list for generation

Word of the day

infographic

/ info grafik

noun

a visual image such as a chart used to represent information ...

See full definition »

SIGN UP

1/6/2014 3:49 PM 1 of 2

Definition of generation in the British & World English dictionary

Reference to **generation** in Language Resources

- Phrase, Fable, and Allusion
- Was the first computer 'bug' a real insect?

generation, nearby words in English

- generalize
- generalized anxiety disorder
- generally
- generalship
- generate
- · generation
- generation gap
- Generation X
- · Generation Xer
- Generation Y
- Generation Yer

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2 of 2 1/6/2014 3:49 PM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

DECLARATION OF JAMES BETZ IN SUPPORT OF OPPOSER'S MOTION FOR SUMMARY JUDGMENT

- I, James Betz, am a resident of Verona, Italy, over twenty-one years of age, and I
 have knowledge of all of the facts contained in this declaration and, if called as a
 witness, I could and would competently testify to all of said facts.
- 2. I am the President and Managing Director of Biotivia, LLC, a company that formulates and manufactures high potency dietary supplements and cosmetics for the medical, consumer, and functional food markets. Biotivia employs a diverse staff of biochemists, research scientists, and physicians whose responsibilities include investigation of the properties of stilbene compounds, with a special focus on Resveratrol, the analogs of Resveratrol, and Pterostilbene. Biotivia was

chosen by the U.S. Pharmacopeial Convention to create the worldwide standard monograph for Resveratrol. No such monograph yet exists for Pterostilbene.

3. I am an expert in the field of stilbenes and the medical and functional food properties of the stilbene molecules, which includes Pterostilbene. I have worked for 20 years in the field of nutraceuticals, and I designed the first high potency (<150mg) Pterostilbene dietary supplement. I am assisted by a staff of full time and contract expert scientists and physicians. I regularly present papers at scientific conferences and symposiums composed of other scientists and physicians whose primary interest is the stilbene group of molecules and their application to human health and disease prevention and treatment. As a peer reviewer for a major scientific journal, I am a recognized expert in this field. The most recent paper I presented was before the 2012 World Resveratrol Conference in Leicester, UK. I was invited to the China Health Conference in Dalian in early October to present a paper on the health and medical applications of the stilbene molecules, specifically Resveratrol and Pterostilbene. I was one of approximately 25 scientists to be invited to the World Resveratrol conference in Tokyo hosted by the University of Denmark. I recently coauthored a paper titled "Resveratrol for the Management of Diabetes" that will be submitted to a major European Endocrinology journal. I am regularly consulted by other scientists and physicians and have provided assistance to numerous medical school and scientific researchers investigating the properties of the stilbene molecules, principally Resveratol and its analogs. The most recent example was an invitation to write a

scientific review of a study done by a multi-national raw materials manufacturer on the effect of chronic administration of moderate dose Trans-resveratrol on the process of lipogenesis in human male subjects. My review was published on the Nutraceutical Ingredients web site, an authoritative news and information source for the industry, on 24 October, 2013. I am also on the review panel for a major New York based scientific journal.

- 4. I have personally conducted, participated in, and/or overseen the development of Biotivia's pterostilbene products as both a primary designer and head of a group of three scientists and one physician.
- 5. Pterostilbene is a compound that is closely chemically related to resveratrol but has certain advantages over resveratrol, including higher bioavailability in certain cellular environments and conditions. Specifically, Pterostilbene is a double-methylated version of resveratrol exhibiting a generally higher bio-availability as it is more easily transported into cells and more resistant to degradation and elimination. The vast majority of the studies done by medical schools and scientific researchers relates to Resveratrol, but a review of the limited evidence presently in the public domain suggests that Pterostilbene is an advancement over Resveratrol vis-à-vis this molecule's biological properties.
- 6. It is my understanding that pterostilbene is commonly described as the next stage of development of resveratrol, or similarly. Words like "next generation of

resveratrol" and "next level of resveratrol" have been, and are, used to describe pterostilbene in general, and not any particular brand of pterostilbene, by researchers and dietary supplement sellers. The phrase "next generation" is relatively commonly used to describe related nutraceutical compounds, whose individual properties may regulate or modulate a common array of biological and biochemical processes at varying levels, intensities, and dosages. It is by no means a unique or proprietary term within the context of dietary supplements or pharmaceutical compounds.

7. It is my opinion that, in many ways, pterostilbene is the next generation of resveratrol. For example, its anti-cancer effects are similar to, but more potent than, resveratrol's. It appears to possess superior cognitive and short term memory enhancement properties, and is more bioavailable than Resveratrol. It is also relatively new as a dietary supplement ingredient, being first introduced several years after the first Resveratrol supplement, since the ability to process and package it in an affordable and shelf-stable manner has only recently been developed. Therefore, pterostilbene is also the next generation resveratrol in the sense of it being newer than and closely chemically related to resveratrol. It could also be considered as a next generation Resveratrol due to the fact that one of its metabolites is actually Resveratrol. It might also be regarded as the next generation of Resveratrol by virtue of its ranking within the stilbene group of phytoalexins given its higher potency than Resveratrol vis-à-vis certain of its biochemical properties. Furthermore, it is the next generation in that it is

produced by a fermentation process, whereas most Resveratrol is produced as a concentrated extract of the Polygonum cuspidatum, or Polygonum multiflorum plant.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on January 1st, 2014

James Betz, President & Managing Dir. Biotivia, LLC

CERTIFICATE OF TRANSMITTAL

This is to certify that a true copy of the foregoing **DECLARATION OF JAMES BETZ IN SUPPORT OF OPPOSER'S MOTION FOR SUMMARY JUDGMENT**, is being filed electronically with the T.T.A.B. via ESTTA on this day, January 24, 2014.

CHANDLER & SHECHET, LLP

Aaron Shechet

Counsel for Opposer,

BIOTIVIA, LLC

arroles &

1844 Bagley Ave., Los Angeles, CA 90035 (310) 339-1354

Carroleca #

CERTIFICATE OF SERVICE (37 C.F.R. §§ 2.101, 2.119)

I, AARON SHECHET, Attorney of Record for Opposer, Biotivia, LLC, hereby certify that a true and correct copy of the foregoing **DECLARATION OF JAMES BETZ IN SUPPORT OF OPPOSER'S MOTION FOR SUMMARY JUDGMENT**, was served by:

1. transmission by Certified first class mail service of the United States Postal Service.

on the attorney of record for the opposed application, at the correspondence address of record in the USPTO for said person as of the date of service, as set forth below:

JOSEPH T. NABOR FITCH EVEN TABIN & FLANNERY 120 S LASALLE ST STE 1600 CHICAGO, IL 60603-3590

Date of Mailing: January 24, 2014

Aaron Shechet

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

<u>MOTION FOR SUMMARY JUDGMENT</u>

I, AARON SHECHET, hereby declare and state as follows under penalty of perjury pursuant to 28 U.S.C. § 1746:

- 1. I am a partner in the law firm of Chandler & Shechet, LLP, counsel of record in this matter for Opposer Biotivia, LLC ("Biotivia").
- 2. On August 30, 2011 Applicant Chromadex, Inc. ("Chromadex") filed a first amended complaint in its civil lawsuit in the United States District Court for the Central District of California case number 8:11-CV11-01273 CJC (MLGx), partly based on Biotivia's use of phrases such as "taking resveratrol to the next level" (the "Civil Action.") A copy of Chromadex's first amended complaint was previously filed by

Applicant on March 26, 2012 as an exhibit to its Motion to Suspend this proceeding. (See Dkt. 1 5.)

- 3. On January 23, 2012, Biotivia made its initial disclosures in the proceeding, pursuant to Trademark Rule 2.120 and FRCP 26(a). A true and correct copy of the initial disclosures is attached hereto as Exhibit 19. True and correct copies of the documents included as part of the initial disclosures are attached hereto as Exhibits 1-18. These documents were printed by me from various websites and then copied and scanned. Physical copies were mailed as part of the initial disclosures. In making its initial disclosures, Biotivia also produced a DVD that included a number of electronically-stored documents, as well as a video presentation. True and correct copies of some of the electronically-stored documents are attached hereto as Exhibits 20-25. Exhibits 20-25 are all publicly-available documents that I downloaded from various websites. Specifically, with regard to Exhibits 1-30, attached hereto:
 - a. Exhibit 1 is a Chromadex press release dated June 13, 2011 that I printed on January 20, 2012 from the website denoted on the exhibit. As of October 10, 2013, the same press release can still be found at: http://www.ibtimes.com/chromadex-corp-cdxc-launch-bluscience-line-supplement-products-major-retailer-gnc-nationwide-july
 - Exhibit 2 consists of printouts of Chromadex-owned websites as denoted on the exhibit. I printed these pages on January 20, 2012.
 - c. Exhibit 3 is the definition of the phrase "Next Generation" as provided by dictionary.com, as denoted on the exhibit. I printed

¹ For purposes herein, "Dkt." stands for "Docket Entry."

this page on January 20, 2012. As of October 10, 2013, dictionary.com still has a definition available at:

http://dictionary.reference.com/browse/next-generation. The definition provided on October 10, 2013 is:

"pertaining to the next generation in a family; also,pertaining to the next stage of development or

version of a product, service, or technology."

- d. Exhibit 4 is the Wikipedia.org entry for "pterostilbene," as denoted on the exhibit. I printed this page on January 20, 2012. As of October 10, 2013, there is still an entry for "pterostilbene" that is substantially the same, if not identical.
- e. Exhibit 5 is a Douglas Labs announcement about its new pterostilbene supplement, dated December 8, 2010. I printed this page on January 20, 2012 from the website denoted on the exhibit. The announcement describes pterostilbene as "a superior form of resveratrol."
- f. Exhibit 6 is a Great Forest Biomedical Ltd. description of pterostilbene in which it describes the use of pterostilbene as "next generation of resveratrol, anti-oxidant and anti-inflammatory agent." I printed this page on January 20, 2012 from the website denoted on the exhibit.
- g. Exhibit 7 is an Alcrea article about pterostilbene dated September15, 2011, in which the headline reads "Ingredient Spotlight:

- Pterostilbene, Next Generation Resveratrol." I printed this page on January 20, 2012 from the website denoted on the exhibit. As of October 10, 2013, this website is still available at: http://www.alcrea-health.com/blog/?p=70.
- h. Exhibit 8 is a Natural News article dated December 4, 2009 that explains the relationship between resveratrol and pterostilbene. It also touted the potential benefits of pterostilbene. I printed this page on January 20, 2012 from the website denoted on the exhibit.
- Exhibit 9 is a page from whomovedmycheesecake.com dated April
 18, 2011. I printed this page on January 20, 2012 from the website
 denoted on the exhibit.
- j. Exhibit 10 is another page from the Great Forest Biomedical Ltd.website about pterostilbene. I printed this page on January 20,2012 from the website denoted on the exhibit.
- k. Exhibit 11 is a printout from Restorehc.com about a pterostilbene product called "Resveratrol-M." I printed this page on January 20, 2012 from the website denoted on the exhibit. As of October 10, 2013, this product is still available at:

 http://www.restorehc.com/product/resveratrol-m.
 The product description still states that "Pterostilbene is considered the next generation of resveratrol."
- Exhibit 12 is a printout of the .pdf "Data Sheet" provided for "Resveratrol-M." It is available under the link "View Data Sheet"

that shows on Exhibit 11. I printed this at the same time as Exhibit 11. As of October 10, 2013, it is still available for reading and/or downloading at

http://www.restorehc.com/sites/default/files/uploadedimages/cardio-resveratrol-m_0.pdf. Exhibit 12, and the document still available as of October 10, 2013, states "Pterostilbene, a methylated form of resveratrol is considered the next generation of resveratrol."

- m. Exhibit 13 is an article from wholehealth.com about resveratrol and pterostilbene, dated December 5, 2011. I printed this page on January 20, 2012 from the website denoted on the exhibit.
- n. Exhibit 14 is a blog entry posted on the Life Extension blog about pterostilbene. I printed this page on January 20, 2012 from the website denoted on the exhibit.
- o. Exhibit 15 is a nutripharma entry for "pterostilbene," in which it states "Pterostilbene, a structural analog of resveratrol, is called the *next generation of resveratrol*." (Emphasis in original). I printed this page on January 20, 2012 from the website denoted on the exhibit. As of October 10, 2013, it is still available with the same description of pterostilbene at http://nutripharma.net/herb-pe/1503-Pterostilbene.html
- p. Exhibit 16 is a printout of Chromadex "enews" articles. One of them has the heading "Pterostilbene – The Next Generation

- Resveratrol." I printed this page on January 20, 2012 from the website denoted on the exhibit.
- q. Exhibit 17 is a printout of the Medicinal Nutraceutics pterostilbene product from iherb.com, which lists as the description "the next generation resveratrol." I printed this page on January 20, 2012 from the website denoted on the exhibit.
- r. Exhibit 18 is a printout from a pteropure.com website listing the supplements that contain pTeropure pterostilbene. I printed this page on January 20, 2012 from the website denoted on the exhibit.
- s. Exhibit 19 are Opposer's initial disclosures.
- t. Exhibit 20 is a true and correct copy of Chromadex's corporate presentation dated September 8, 2011. This was downloaded as a .pdf and produced electronically as part of Opposer's initial disclosures.
- u. Exhibit 21 is a true and correct copy of a Douglas Laboratories electronic "product data" sheet about its pterostilbene product in which it states "Pterostilbene, a methylated form of resveratrol is considered the *next generation of resveratrol*." (Emphasis in original.) This was downloaded as a .pdf and produced electronically as part of Opposer's initial disclosures. As of October 10, 2013, this is still available at:

http://www.douglaslabs.com/pdf/pds/200901.pdf

- v. Exhibit 22 is a true and correct copy of a Chromadex brochure about pTeropure pterostilbene. This was downloaded as a .pdf and produced electronically as part of Opposer's initial disclosures.
- w. Exhibit 23 is a true and correct copy of a Chromadex presentation about pTeropure pterostilbene. This was downloaded as a .pdf and produced electronically as part of Opposer's initial disclosures.
- x. Exhibit 24 is a true and correct copy of a Chromadex brochure about pTeropure pterostilbene in which it states "Pterostilbene is...The Next Generation Resveratrol." This was downloaded as a .pdf and produced electronically as part of Opposer's initial disclosures. Its URL was https://www.chromadex.com/wpresources/Upload/Article/pTeroPu re pterostilbene Brochure.pdf. As of October 10, 2013, a similar brochure can be found at that URL, although the contents of the brochure found at that URL on October 10, 2013 vary from the document I saved previously.
- y. Exhibit 25 is a true and correct copy of the data sheet for the Medicinal Nutraceutics pterostilbene product. This was downloaded as a .pdf and produced electronically as part of Opposer's initial disclosures.
- z. Exhibit 26 is a true and correct copy of Opposer's Request forAdmission, Set One (along with its exhibits, labeled Exhibits 1-19

in the Request for Admission) propounded on Applicant in this proceeding.

aa. Exhibit 27 is a true and correct copy of Applicant's Responses to Opposer's Requests for Admission, Set One.

bb. Exhibit 28 is a true and correct copy of the USPTO "Trademark Official Gazette Publication Confirmation" for the trademark "POTENSHAA," in which the USPTO describes the new-style Trademark Official Gazette as "the Next Generation TMOG (eOG)." In looking at the publication confirmation for marks that have recently been published, it appears that the USPTO uses the language "the Next Generation TMOG (eOG)" in all recent publication confirmations to indicate that the new-style Official Gazette is the next stage of development or version of its product, service, or technology.

cc. Exhibit 29 is a true and correct copy of the Oxford dictionary definition of the word "next."

dd. Exhibit 30 is a true and correct copy of the Oxford dictionary definition of the word "generation."

I declare under penalty of perjury that the foregoing is true and correct. Executed in Los Angeles, California.

Executed on: January 22, 2014

Darrolecto Aaron Shechet

CERTIFICATE OF TRANSMITTAL

This is to certify that a true copy of the foregoing **DECLARATION OF AARON SHECHET IN SUPPORT OF OPPOSER'S MOTION FOR SUMMARY JUDGMENT,** along with all Exhibits thereto, is being filed electronically with the T.T.A.B. via ESTTA on this day, January 24, 2014.

CHANDLER & SHECHET, LLP
Aaron Shechet
Counsel for Opposer,
BIOTIVIA, LLC

Darobell &

1844 Bagley Ave., Los Angeles, CA 90035 (310) 339-1354

Caroleca &

CERTIFICATE OF SERVICE (37 C.F.R. §§ 2.101, 2.119)

I, AARON SHECHET, Attorney of Record for Opposer, Biotivia, LLC, hereby certify that a true and correct copy of the foregoing **DECLARATION OF AARON SHECHET IN SUPPORT OF OPPOSER'S MOTION FOR SUMMARY JUDGMENT**, along with all Exhibits thereto, was served by:

1. transmission by Certified first class mail service of the United States Postal Service.

on the attorney of record for the opposed application, at the correspondence address of record in the USPTO for said person as of the date of service, as set forth below:

JOSEPH T. NABOR FITCH EVEN TABIN & FLANNERY 120 S LASALLE ST STE 1600 CHICAGO, IL 60603-3590

Date of Mailing: January 24, 2014

Aaron Shechet

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

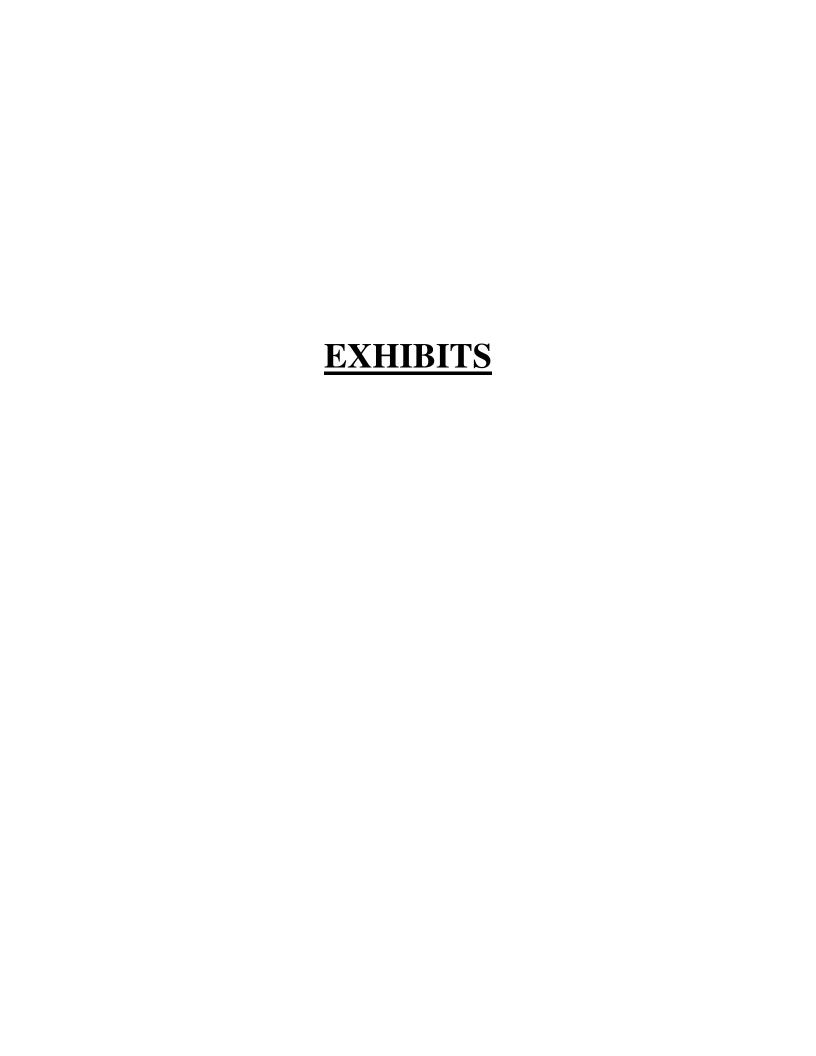
in the matter of trademark application Se	
For the mark: THE NEXT GENERATION	ON RESVERATROL
Published in the Official Gazette on Aug	gust 23, 2011
X	
BIOTIVIA, LLC	Opposition No.: 91202162
Opposer	11
v.	
CHROMADEX, INC.	
Applicant	
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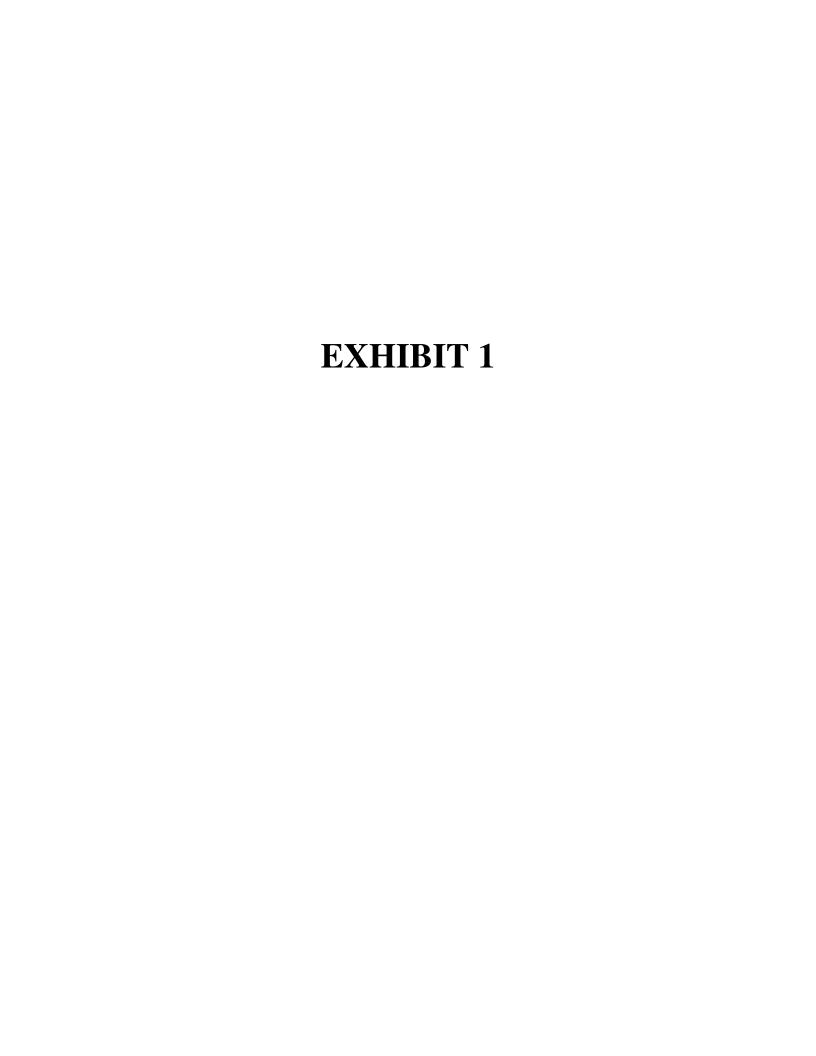
TABLE OF EXHIBITS TO DECLARATION OF AARON SHECHET IN SUPPORT OF OPPOSER'S MOTION FOR SUMMARY JUDGMENT

Exhibit	<u>Description</u>
1.	Chromadex press release re: "Bluscience"
	featuring "the next generation resveratrol."
2.	Pages from Chromadex website.
3.	Dictionary definition of "next generation."
4.	Wikipedia article on Pterostilbene.
5.	Douglas Laboratories article about
	Pterostilbene Supreme product.
6.	Great Forest website describing
	pterostilbene.
7.	Alcrea article about pterostilbene.
8.	Natural News article about pterostilbene.
9.	"whomovedmycheesecake" article about
	pterostilbene.
10.	Great Forest website describing

	pterostilbene (2).
11.	Resveratrol-M pterostilbene product and description.
12.	Resveratrol-M pterostilbene product brochure.
13.	Wholehealth.com article about resveratrol and pterostilbene.
14.	Life Extension article about pterostilbene.
15.	Nutripharma description about pterostilbene.
16.	Chromadex eNews articles.
17.	Medicinal Neutraceutics pterostilbene product for sale on iHerb.com featuring "the next generation resveratrol."
18.	Chromadex (pteropure.com) list of products that include pTeroPure.
19.	Initial Disclosures of Opposer.
20.	Chromadex Corporate Presentation.
21.	Douglas Laboratories Pterostilbene Supreme brochure.
22.	Chromadex pTeroPure brochure.
23.	Chromadex pTeroPure presentation.
24.	Chromadex pTeroPure brochure (2).
25.	Medicinal Nutraceutics pterostilbene product brochure.
26.	Opposer's Requests for Admissions, Set One (with Exhibits).
27.	Applicant's Responses to Opposer Biotivia's Requests for Admission, Set

	One.
28.	USPTO "Trademark Official Gazette
	Publication Confirmation" for the
	trademark "POTENSHAA."
29.	Oxford dictionary website definition of
	"Next."
30.	Oxford dictionary website definition of
	"Generation."





Print

Monday, June 13, 2011 11:42 AM EDT

ChromaDex Corp. (CDXC) to Launch BluScience Line of Supplement Products via Major Retailer GNC Nationwide this July

By QualityStocks

ChromaDex Corp., the established provider of top-quality ingredients and solutions as a natural products supplier to a variety of industries, reported the launch of its new BluScience dietary supplement line today.

BluScience products will feature the next generation resveratrol, pterostilbene (a polyphenol naturally occurring in blueberries), in the form of the Company's proprietarily refined natural, identical form of trans-pterostilbene, pTeroPure®.

BluScience is scheduled to hit shelves nationwide at major nutraceutical and supplements retailer GNC this July, in conjunction with a simultaneous web roll out via GNC.com.

The ultra purified form of the naturally occurring pterostilbene found in pTeroPure is vastly superior to resveratrol, offering significantly enhanced oral bioavailability and prolonged overall duration in the body, meaning that it will be absorbed better by tissues and have a longer-lasting effect.

The BluScience family of products will feature a variety of pTeroPure-based offerings:

- HeartBlu fortified with blueberry extract and phytosterols, engineered specifically to maintain a healthy heart
- EternalBlu ameliorates oxidative stress and is packed with anti-oxidants
- TrimBlur packed with vitamins, minerals and jojoba for maximum metabolic support
- · Blu2Go is a melt super-charged with caffeine for energy boosting goodness

VP of Merchandising at GNC, Ted Deitrick, hailed the novel pTeroPure-based lineup of products that BluScience consists of and was clearly pleased that GNC would be making them available in stores this July, adding that the products are ideal for maintaining GNC's reputation for having a serious commitment to health.

President of CDXC, William Spengler, called the launch of BluScience a major milestone, both for the Company as a whole and for the advancement of pTeroPure's commercialization objectives. Spengler cheered GNC as the perfect place to get the kind of exposure the product line demands and remarked that it was guite auspicious for CDXC's first national consumer launch.

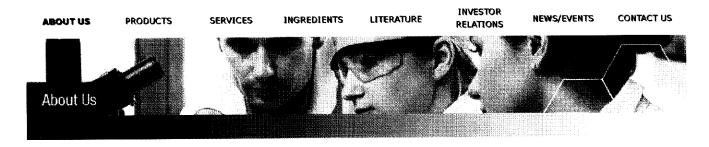
Spengler cited the massive target market in the US for BlueScience, consisting of over half the population, who see vitamins and nutrient supplements as part of an everyday healthy lifestyle.

EXHIBIT 2

My Cart (0 item) Request Quote (0 item) Register Login

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About ChromaDex

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Management Team

Careers

International

About ChromaDex

ChromaDex® is an innovative **natural products** company that provides **proprietary**, **science-based** solutions and ingredients to the dietary supplement, food & beverage, cosmetic, and pharmaceutical industries.

In particular, ChromaDex®

- Develops & markets phytochemical and botanical reference standards & materials
- Develops & markets novel & natural products that have a positive impact on health
- Brings safety & quality to the market with specialized services and scientific rigor

ChromaDex® was established in 1999 in response to growing demand for natural product reference standards, materials, and services. This growth has continued with increasing consumer and government demand for quality assurance methods across the spectrum of consumer-focused products.

Today, ChromaDex® continues it's leadership in the reference standards & services business with a customercentric approach supported by scientific rigor. Its expertise in this market gives it a unique foundation for combining the power of nature with the science of health to develop & market natural & novel ingredients.

 ${\sf ChromaDex}^{\circledR} \ {\sf is \ publicly-traded \ company \ (OTCBB:CDXC.OB)}.$

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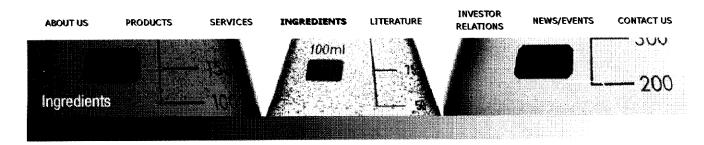
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Q.



About ChromaDex Ingredients

pTeroPure

Curcumin

Anthopure Technology

Anthocyanins

Request Form

pTeroPure



pTeroPure Pterostilbene was founded as a high-quality brand of ChromaDex® as a result of its exclusive worldwide patent rights for pterostilbene based on the technology licensed from the University of Mississippi and the USDA. Like resveratrol, pterostilbene (tero-STILL-bean) belongs to a class of compounds called phytoalexins, which are naturally produced by plants when under attack by pathogens such as bacteria or fungi. Pterostilbene and resveratrol have very similar pharmacologic properties, however pterostilbene has several key advantages over resveratrol. Pterostilbene is one of several stilbenes found in certain berries (e.g., blueberries, cranberries, sparkleberries, lingonberries, and grapes), thus, consumption of these small fruits may help improve health.

pTeroPure is a nature identical form of trans-pterostilbene. Pterostilbene is the next generation of resveratrol as it a methylated resveratrol analog naturally found in berries with superior biological activity, better oral bioavailability, and metabolizes more slowly in the body, allowing more time for its antioxidant activities to act. Please contact your ChromaDex $^{\textcircled{\$}}$ representative today for pricing or to receive a sample.

Visit the pTeroPure website



ChromaDex® pTeroPure Pterostilbene Brochure



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Pterostilbene - Overview

Pterostilbene - pronounced [tero-still-bean]

- Is a polyphenol that occurs naturally in blueberries
- . Is a phytoalexin, acting as the blueberry's defense system
- Has been used for thousands of years in Indian Ayurvedic medicine as a "blood tonic"
- Is supported by scientific research "The more we study Pterostilbene, the more we see its huge potential in the human health field." Dr. Agnes Rimando, USDA – ARS
- Has the following significant advantages over resveratrol (also a phytoalexin but found in grapes):
 - Much improved bio-availability 70-90% versus 20-30%)
 - Much longer presence in the body (105 minutes versus 14 minutes)
 - Greater oral absorption
 - Greater metabolic stability



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ChromaDex













pieroPure Presents as Part of the Functional Ingredients Webinar Series



The Breakthrough...Pure, Potent, Proven



Superior biological activity









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Pterostilbene - Literature

Brochure

Pterostilbene: The Science Behind the Next Generation Resveratrol Literature Review

- PDF of Review
- PDF of Abstracts
- · Link to Pubmed









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pTeroPure Brochure FAQs Request Info Request Sample To receive product information, please complete the form. You will immediately be sent an email containing the download link.

Please select the items you would like to receive:
☐ Pterostilbene Abstract Summaries
Pterostilbene Literature References
Cholesterol White Paper
pTeroPure: The Next Generation Resveratrol Presentation
Contact Information: First Name:
Last Name:
Company:
Address 1:
Address 2:
City:
State:
Postal Code:
Country:
Phone:
Email:
More Information:
I am currently a pTeroPure customer.
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About Us - pTeroPure®

pTeroPure was founded as a high-quality raw materials brand of ChromaDex as a result of its exclusive worldwide patent rights for pterostilbene based on the technology licensed from the University of Mississippi and the USDA. ChromaDex promotes health and well-being through the discovery and development of nutraceutical ingredients - naturally ocurring molecules that can be integrated into dietary supplements, nutritional products and functional foods. In a consolidating industry, ChromaDex has established itself by combining scientific rigor to its products and services along with a strong customer centric business model. ChromaDex is a Life Sciences business that is publicly traded. (OTC stock symbol



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Pterostilbene - Why pTeroPure™?

pTeroPure will promote health and well-being through the discovery and development of nutraccutical ingredients - naturally occurring molecules that can be integrated into dietary supplements, nutritional products and functional foods. Like resveratrol, pterostilbene (tero-STILL-bean) belongs to a class of compounds called phytoalexins, which are naturally produced by plants when under attack by pathogens such as bacteria or fungi. Pterostilbene and resveratrol have very similar pharmacologic properties, however pterostilbene has several key advantages over resveratrol. Pterostilbene is one of several stilbenes found in certain berries (e.g., blueberries, cranberries, sparkleberries, lingonberries, and grapes), thus, consumption of these small fruits may help improve health.

pTeroPure is a nature identical form of trans-pterostilbene. Pterostilbene is the next generation of resveratrol:

- · a methylated resveratrol analog naturally found in berries
- · superior biological activity
- better oral bioavailability
- · metabolizes more slowly in the body, allowing more time for its antioxidant activities to act













Pterostilbene - Science - Webinar

The presentation will focus on pterostilbene, a natural derivative of resveratrol found in small berries such as blueberries and grapes. Like resveratrol, pterostilbene functions as an antioxidant and an anti-aging agent and has been shown to help lower cholesterol and blood glucose levels. Unlike resveratrol, pterostilbene has greatly improved oral adsorption and metabolizes more slowly in the body, allowing more time for its antioxidant activities to take place. The presentation will also explain the science behind pterostilbene's ability to lower cholesterol and how it acts to reduce oxidative stress and promote anti-aging.

"The science behind the use of pterostilbene as an alternative to resveratrol is sound, and with the advent of the first human clinical study on pterostilbene that we are conducting in collaboration with the University of Mississippi, pterostilbene is here to stay." said Frank L. Jaksch Jr., cofounder and CEO of ChromaDex. "The science behind the use of pterostilbene as an alternative to resveratrol is sound, and we anticipate pterostilbene to break in to the anti-inflammatory and pain management sectors as well."

Speakers include:

Agnes Rimando, Ph.D., Research Chemist USDA, ARS University, MS

- Learn how pterostilbene functions as a neuroprotecting agent and thus acts as a potential cognitive function enhancer.
- Discover the anti-oxidant potential of pterostilbene and how it acts to protect cells from oxidative stress

Dennis Feller, Ph.D., Chair (retired), Dept. of Pharmacology College of Pharmacy, University of Mississippi

Learn about the role of pterostilbene as a PPAR-alpha agonist in the lowering of cholesterol

Jeremy Bartos, Ph.D., Ingredients Brand Manager, pTeroPure

- Grasp the similarities and differences between pterostilbene and resveratrol and why pterostilbene has a higher biopotential and bioavailability than resveratrol
- Receive a brief overview of recently published science supporting the benefits of pterostilbene from heart health and anti-aging to diabetes and cancer

The webinar is hosted by the American Council for Medicinally Active Plants (ACMAP) / pTeroPure.

Webinar available now on demand, click here.















Pterostilbene - Science - VendorWorks

Pterostilbene - The Next Generation Resveratrol

Pterostilbene is a relative of resveratrol naturally found in small fruits such as blueberries and cranberries. Like resveratrol, it functions as an antioxidant and an anti-aging agent, improving mitochondrial function and protecting against metabolic disease by activating SIRT1 and mimicking calorie restriction. Unlike resveratrol, pterostilbene has greatly improved oral adsorption and metabolizes more slowly in the body, allowing more time for its antioxidant activities to take place.

Since pterostilbene is also synergistic with resveratrol, addition of pterostilbene to existing resveratrol products may enhance their efficacy. The pterostilbene products developed by pTeroPure are based on the technologies licensed from the USDA ARS and the University of Mississippi.

Speaker: Jeremy Bartos, Ph.D., ingredient products manager, pTeroPure (a division of ChromaDex)

VendorWorks at SupplySide 2010

VendorWorks Presentation











News

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Pterostilbene - Science - Comparisons with Resveratrol

Pterostilbene and resveratrol have very similar pharmacologic properties, however Pterostilbene has several key advantages over resveratrol. The main difference between Pterostilbene and resveratrol is structural; Pterostilbene contains two methoxy groups and one hydroxyl group while resveratrol has three hydroxyl groups.



The two methoxy groups cause Pterostilbene to be more lipophilic (oil-soluble) than resveratrol, which increases oral absorption and gives it a higher potential for cellular uptake, while reducing the rate of elimination from the body. ¹

Pterostilbene also has a much longer half life in the blood than resveratrol (105 minutes vs. 14 minutes)^{2,3}, and has shown higher bioactivity in methods to improve heart health and reduce the effects of oxidative stress. 4,5 Pterostilbene and resveratrol are synergistic however, with improved ability to protect against oxidative damage when taken together.⁶

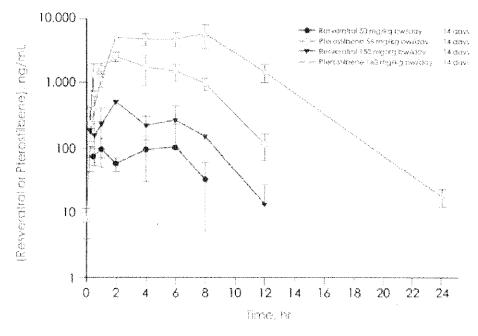
Comparisons with Resveratrol - Bioavailability

In the instance of stilbenoids, the key to bioactivity is bioavailability. During first pass through the body, the liver acts as a gatekeeper, filtering out and metabolizing foreign compounds such as pollutants, pharmaceuticals and phytochemicals. By "tagging" these compounds it renders them bio-inactive and marks them for elimination from the body. For stilbenes the liver will glucuronidate or sulfate the compound by adding a form of glucose or a sulfate group to any free hydroxyls on the structure.

Resveratrol has three places where it can be "tagged" while pterostilbene only has one, meaning that resveratrol is rapidly cleaned out by the liver while pterostilbene is allowed to continue on in the blood stream and eventually localize in the areas of need in the body. A recent paper has demonstrated that when administered orally, Pterostilbene shows 95% bioavailability while resveratrol only has 20% bioavailability. Additionally, pterostilbene's lower total body clearance rates and subsequent Vss value (measuring apparent volume of distribution) suggest extensive tissue distribution. ¹

Comparisons with Resveratrol - Half-Life

Because of the extent of glucuronidation and sulfation of resveratrol by the liver, its half-life in the blood is ~14 minutes. With the two methoxy groups, pterostilbene is more robust with a half-life of ~105 minutes, over 7x longer than resveratrol.3 This means that if a product contains 100mg each of both pterostilbene and resveratrol, by the time you lost 50 mg of pterostilbene in the blood you have already lost 99.25 mg of the resveratrol that you took at the same time! The graph below shows blood concentrations of pterostilbene and resveratrol over a 24 hour time period, note that the scale is logarithmic. 1

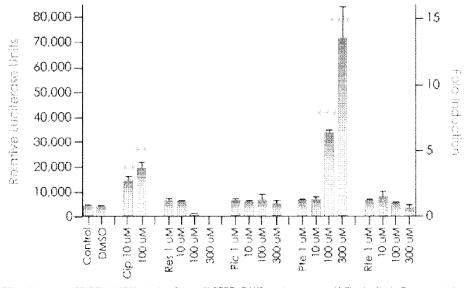


Plasma concentration—time curves for resveratrol and pterostifiene. Animals were orally dosed daily for 14 days, and pharmacokinetic profiles were obtained after the last dose. Symbols represent mean \pm SD for n = 3. From Kapetanovic et al., Cancer Chemother Pharmacol. 2010 Nov 30

Comparisons with Resveratrol - Bioactivity

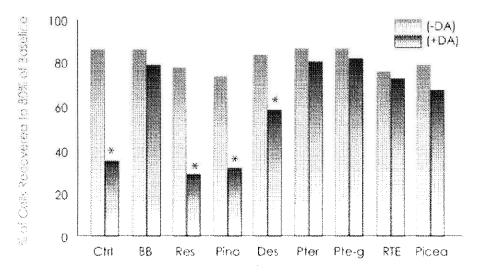
Due to the addition of the two methoxy groups, pterostilbene is more lipophilic (oil-soluble) than resveratrol. This allows pterostilbene easier uptake through the cell's lipid bilayer and thus gives it a higher potential for cellular uptake. Several published studies also refer to pterostilbene as having better bioactivity than resveratrol.

For example, it has been shown that unlike the resveratrol and related stilbenes piceatannol and trimethoxystilbene, pterostilbene is a potent peroxisome proliferator activated receptor alpha (PPARa) agonist, lowering lipid levels in the blood stream to reduce cholesterol levels at a higher rate than even pharmaceuticals such as ciprofibrate⁴



Effect of stilberies on PPARR in H4IIEC3 cells transfected with PPRE-AB LUC reporter gene plasmid. Cip, ciprofibrate, Res. resveratrol; Pic piceatannot, Pe, pterostilbene and Rte resveratrol tranethyl ether. "Significantly different from control p.) 0.001, n.) 4. Control is media only; DMSO is solvent control without test compounds. From Rimando et al., 2005. Reproduced by permission of the author.

In addition, pterostilbene is able to protect cells from oxidative stress in vitro, while resveratrol is not.⁵



Mean Ca2+ recovery in M1-transfected COS-7 cells control and treated with the stillbenes, following 0 (+DA) or 1 mM Departine (+DA) treatment. "Difference in recovery between non-DA-treated and DA-treated cells for each treatment ($p \times 0.001$). Chi = control cells. B8 = cells given Blueberry Extract, Res = Resveratrol. Pino = Pinostilbene, Des = Descryftaponisgeran, Pter = Pterostilbene, Pte-G = Pterostilbene, Giscoside, RTE = trimethoxysiblene, Pte-a = Piceatannol. From Joseph et al., J. Agric. Food Chem. 66:10544-10551 (2008). Reproduced with permission of the authors.

Both resveratrol and pterostilbene have also been shown to exhibit beneficial effects in the control of atherosclerosis and heart disease, however the structural modifications to resveratrol that are found in pterostilbene are needed to increase its bioavailability while preserving the published beneficial activities. ¹⁻³

Comparisons with Resveratrol - Synergism

Researchers have also shown that there are synergistic effects when resveratrol is combined with pterostilbene. For example, an in vitro assay was set up to measure the ability of pterostilbene and resveratrol to protect human erythrocytes from damage caused by an oxidative stressor. They showed that the combination of pterostilbene and resveratrol was better than the effect of either compound alone. This synergistic effect was not seen between resveratrol and quercetin nor pterostilbene and quercetin. In fact, quercetin with either compound was less effective than the compounds on their own, demonstrating an antagonistic effect.

Total concentration (pM)°	Combination Index ^b			
•	Quercetin + Resveratrol	Quercetin + Pterostilbene	Resveratrol + Ptersotilbene	
2.5	0.57 ± 0.15°	2.86 ± 0.50	$0.45 \pm 0.10^{\circ\circ}$	
5	0.65 ± 0.21°	0.90 ± 0.11	0.46 ± 0.18°	
10	0.90 ± 0.46	1.27 ± 0.30	0.65 ± 0.11°	
20	1.06 ± 0.37	1.43 ± 0.40	$0.53 \pm 0.12^{\circ}$	
40	0.95 ± 0.59	1.70 ± 0.67	0.82 ± 0.13°	
60	0.80 ± 0.16	1.66 ± 0.41	0.89 ± 0.06°	
80	1.04 ± 0.23	1.75 ± 0.61	1.18 ± 0.06	
100	1,29 ± 0.24	1.41 ± 0.56	1.47 ± 0.02	

Combination index for LPO inhibition in human crythrocytes by mixtures of quercetin, trans- resveratrol and pterostilbene, From Mikstacka et al., Plant Foods Hum Nutr. 65, 57 (2016). Reproduced with permission of the authors.

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EXHIBIT 3

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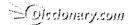
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EXHIBIT 4

Pterostilbene

From Wikipedia, the free encyclopedia

Pterostilbene is a stilbenoid chemically related to resveratrol and is found in blueberries and grapes. It belongs to the group of phytoalexins, agents produced by plants to fight infections. Based on animal studies it is thought to exhibit anti-cancer, anti-hypercholesterolemia, anti-hypertriglyceridemia properties, as well as fight off and reverse cognitive decline. It is believed that the compound also has anti-diabetic properties, but so far very little has been studied on this issue.

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- 1 Pharmacokinetics
- 2 Animal studies
 - 2.1 Lowering blood lipids and cholesterol
 - 2.2 Diabetes
 - 2.3 Cognitive decline
 - 2.4 Possible anti-cancer effects
- 3 Human studies
- 4 In wine
- 5 Toxicity
- 6 See also
- 7 References
- 8 External links

Pharmacokinetics					
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	Pterostilbene
	H ₃ CO OH OH OCH ₃
	IUPAC name
4	1-[(E)-2-(3,5-Dimethoxyphenyl)ethenyl]phenol
	Other names
·	3',5'-Dimethoxy-4-stilbenol 3,5-Dimethoxy-4'-hydroxy- <i>E</i> -stilbene
	Identifiers
CAS number	537-42-8
PubChem	5281727
ChemSpider	4445042
ChEMBL	CHEMBL83527
Jmol-3D	Image 1 (http://chemapps.stolaf.edu
images	/jmol/jmol.php?model=O%28c1cc%28cc%28OC%29c1
an aan aram kan saar aram aram ar	%29%5CC%3DC%5Cc2ccc%28O%29cc2%29C)
	SMILES
ļ	InChI
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Molecular formula	C ₁₆ H ₁₆ O ₃
Molar mass	256.296 g/mol
Exact mass	256.109944
Except wh	★ (verify) (what is: ✓/★?) here noted otherwise, data are given for materials in their standard state (at 25 °C, 100 kPa)
	Infobox references

Pterostilbene is a double-methylated version of resveratrol exhibiting a his

version of resveratrol exhibiting a higher bioavailability as it is more easily transported into the cell and more resistant to degradation and elimination. [2] In rats, pterostilbene's oral availability is 67%-94%, and its half-life has been published to be between 78 minutes and 104 minutes. [3][4][5]

Pterostilbene has anti-inflammatory, antineoplastic, and antioxidant actions via modulations of gene expression and enzyme activity. [2] In plants the substance displays antifungal [6] and antiviral activities. [7]

Focus of studies has been generally on the trans isomer of pterostilbene. [2]

Animal studies

Lowering blood lipids and cholesterol

Studies that used animals fed on blueberry based diets found significant reduction in blood lipid count and cholesterol count. While lipids and cholesterol stored in the cells do not pose much harm, elevated lipid and cholesterol levels in the blood have been linked to heart disease and stroke. In the mentioned study blueberries were found to be more effective than ciprofibrate, a cholesterol-lowering drug predominantly used outside the United States. [8] According to the study pterostilbene binds to PPARs, breaking down the cholesterol. [9]

Diabetes

Similar to what has been discovered with the drug metformin, pterostilbene has been shown to lower blood glucose levels in rats by as much as 56 percent, while simultaneously raising insulin and hemoglobin levels to near normal levels. [10]

Cognitive decline

In a study of 40 19-month-old rats fed either a normal diet or a diet containing blueberry, strawberry, or spinach extracts, the rats that were fed blueberry extracts had a significant reversal in motor-skill decline due to aging as well as other cognitive impairments. All of the diets above, except the normal one, resulted in some reversal or reduction of cognitive decline but none greater than the blueberry group. [11] Even when animal based studies yield positive results, the effects on humans may not be the same.

Possible anti-cancer effects

In 2002, Rimando and UIC collaborators found in experiments using rat mammary glands that pterostilbene possessed potent anti-oxidant characteristics and possible cancer-fighting properties at concentrations similar to resveratrol.^[12]

Additional work by Rimando and collaborators revealed a possible mechanism for pterostilbene's purported anti-cancer properties. Using mice cells, they demonstrated that pterostilbene, as well as other analogs of resveratrol, potently inhibits an enzyme called cytochrome P450. [citation needed] (Cytochromes are found within the cells of animals, plants, bacteria, and other microorganisms that transport electrons. They're also a factor in people's varying response to drugs and toxins entering their bodies. Cytochrome P450 enzymes activate a variety of compounds known as "procarcinogens," which can turn substances such as cigarette smoke and pesticides into carcinogens.)

According to Rimando, Pterostilbene showed strong inhibitory activity, much more than resveratrol,

2 of 5

against a particular form of cytochrome P450 in a mouse mammary gland culture assay.

Human studies

No randomized human studies have been completed, however the first human clinical trial on the effect of pterostilbene on cholesterol and blood pressure should run from Dec 2010 to Jan 2013 at the University of Mississippi. [13] Effect upon human health is an extrapolation of animal data. The data collected from rat studies suggest a dose of 50–100 mg of pterostilbene 2x/day, similar to the dosage of resveratrol. [10][14]

In wine

While resveratrol has been touted for its heart healthy benefits, pterostilbene is not found in wine despite darker grapes having the highest concentrations among the fruit. The reason believed is that it is unstable in light and air.

Toxicity

Pterostilbene is not known to be toxic to humans. [2]

See also

- Phytonutrients
- Phytosterol
- Blueberry
- Piceatannol, a stilbenoid related to both resveratrol and pterostilbene.
- List of phytochemicals and foods in which they are prominent

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External links

- Pterostilbene on diabetes, fungicides, and Pterostilbene vs. Resveratrol (http://www.scienceblog.com/community/older/2002/F/2002284.html)
- WebMD article on cognitive decline (http://www.webmd.com/content/article/93/102127.htm)
- Lowering cholesterol with pterostilbene (http://cholesterol.about.com/od/cholesterolnutrition101/a/blueberries.htm)

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EXHIBIT 5

The manufacturer's resource for dietary supplements & healthy foods and beverages

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Douglas Labs Debuts Pterostilbene Supplement

December 8, 2010

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Pterostilbene, which has been called a superior form of resveratrol, is the star of Douglas Laboratories' new Pterostilbene Supreme dietary supplement, available in January. In addition to 50 mg of pterostilbene and 100 mg of resveratrol per serving, the product provides 250 mg of Indena S.p.A.'s Meriva-brand curcumin phytosome and 1000 IU of vitamin D3 per serving.

Pterostilbene supplier pTeroPure Inc. (Irvine, CA) says that pterostilbene demonstrates better absorption and a higher potential for cellular uptake compared with resveratrol. It also has a longer half life in the blood compared with resveratrol (105 min. versus 14 min.), which pTeroPure says may allow for enhanced physiological effects.

≥ (#) The company's pTeroPure brand of pterostilbene is a natureidentical, 99%+ trans-pterostilbene that pTeroPure says is

superior to other marketed stilbenes due to the ingredient's high purity and sustainable source material. The company says published reports have shown pterostilbene and resveratrol to be synergistic in protecting cells from damage caused by oxidative stress.

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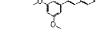
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CAS No: [537-42-8]

Molecular Formula: C₁₆H₁₆O₃

Specifications1: ≥99.5%, single impurity<0.1% (HPLC)

Specifications2: ≥99%, exclude one homologue, all other single impurity<0.1%

(HPLC)

Appearance: Off white crystal powder

mp: 89-92°C

Usage: Next generation of resveratrol, anti-oxidant and anti-inflammatory agent

Other Name:

Trans-Pterostilbene;

3,5-Dimethoxy-4'-hydroxy-trans-stilbene;

Trans-3,5-Dimethoxy-4'-hydroxystilbene;

(E)-4-[2-(3,5-dimethoxyphenyl)ethenyl]-Phenol;

4-[(1E)-2-(3,5-dimethoxyphenyl)ethenyl]-Phenol

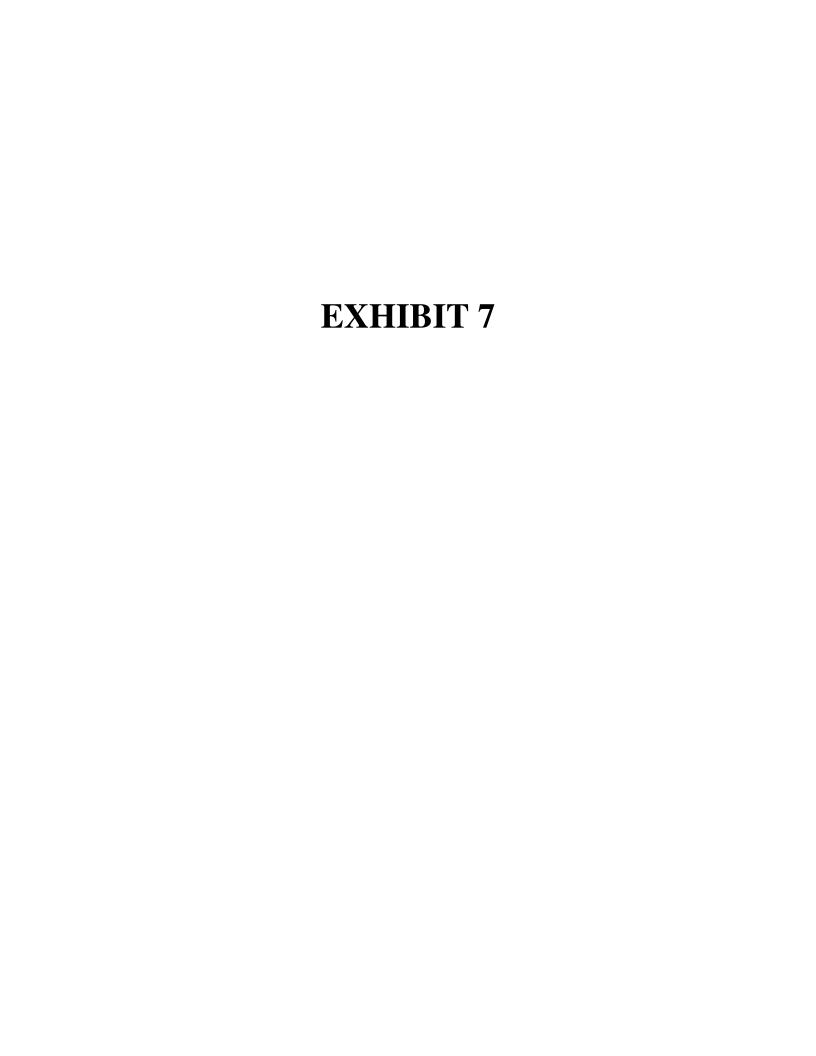
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Ingredient Spotlight: Pterostilbene, Next Generation Resveratrol

Posted on September 15, 2011 by AST

We see great potential for creating custom nutritional supplements using the potent antioxidant pterostilbene, offering health benefits ranging from anti-aging, heart health, oxidative stress and memory. Because of its better absorption and ability to last up to 7 times longer in the body than resveratrol, current science supports lower a daily dosage create an opportunity to include other key nutrients within the same supplement.

You may already know ..

Resveratrol is a naturally occurring plant polyphenol commonly found in grape vines and skins. Highly regarded as a powerful antioxidant, it plays supporting roles in normal cardiovascular and mitochondrial function. Studies also indicate resveratrol may be supportive in maintaining the normal aging process by helping to prevent free radical damage that can lead to premature aging of cells.

But are you aware ...

Pterostibene is a methylated resveratrol that is naturally occurring in berries Some advantages over resveratrol include

- · Superior biological activity
- · Better oral bioavailability
- · Slower metabolism in the body

The enhanced activity of pterostilbene compared to resveratrol may be explained by structural differences. Pterostilbene with two methoxy groups and one hydroxyl group has a greater ability to dissolve in fats, oils, lipids and non-polar solvents, and a higher potential for cellular uptake than resveratrol, which has three hydroxyl groups.

Pterostilbene also supports cardiovascular health. In vivo studies demonstrate that pterostilbene possesses lipid and glucose lowering effects.

Two may be better than one!

Both pterostilbene and resveratrol support mitochondrial function and healthy aging by activating SIRT1, a key enzyme in a family of proteins that have been associated with influencing aging, energy efficiency, and alertness during low-calorie intake.

Researchers have suggested that these two compounds also work synergistically. The combination of pterostilbene and resveratrol in a

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Friday, December 04, 2009 by: Deanna Dean See all articles by this autho



(NaturalNews) You may not have heard of pterostilbene (pronounced "tero-Still-bean) yet. No, it's not a paleontologist 160 million year-old dream discovery along with Triceratopsan. It is exciting news nonetheless. Resveratrol grabbed our attention a decade ago with its cardiovascular and cancer-fighting benefits; now pterostilbene is making its debut. A derivative of resveratrol, the compound is found in the

skins of red grapes. Prospects are strong for inhibiting breast cancer, diabetes, and LDL cholesterol - for starters. "The more we study pterostilbene, the more we see its huge potential in the human health field," says chemist Agnes Rimando of ARS's Natural Products Utilization Research Laboratory in Oxford,

Found in blueberries, grapes and the bark of the Indian Kino Tree, pterostilbene has been around for centuries in Avurvedic medicine

Chemist Rimando began experimenting with pterostilbene as early as the 1990's when its fungicidal and antidiabetic properties had already been established. In 2002 Rimando and her University of Illinois at Chicago colleagues discovered pterostilbene mimicked the cancer-fighting properties of resveratrol. In that same study, Rimando, Oxford physiologist Stephen Duke, and scientists at the University of Buenos Aires in Argentina found that pterostilbene claimed yet another benefit as a powerful antioxidant

More recently Rimando and scientists at the University of Medical Science in Poznan, Poland held a study led by Renata Mikstacka, that showed pterostilbene's exciting potential as a cancer inhibiting compound with regard to certain enzymes. "Pterostilbene showed strong inhibitory activity against a particular form of cytochrome P450, which may explain the cancer preventive property it demonstrated," but she says more studies are needed to explain this process.

Korean cancer researchers agree there is growing evidence that pterostilbene provides chemoprevention, which is the use of natural or laboratory-made substances to prevent a disease such as cancer Pterostilbene's antioxidant strength and anti-inflammatory actions help block the inflammation/cancer

In another study using rat liver cells, university scientists compared the lipid-lowering effects of pterostilbene to that of ciprofibrate, a drug used for controlling lipids. Lipid tests are often part of preventative care that helps determine whether there is significant risk for arteriosclerosis, a hardening of the arteries that interferes with blood flow.

They based their comparison on each compound's ability to activate PPARa, short for peroxisome proliferator-activated receptor alpha. Activation leads to lowering of lipids in the blood. Pterostilbene outperformed resveratrol and was as effective as ciprofibrate in activating PPARa

It is remarkable what potential health benefits pterostilbene could offer. Increased life span, improvement in age related disorders such as atherosclerosis, chronic inflammatory diseases, cognitive decline, learning and memory, cancer prevention, and enhanced insulin sensitivity all stand as hopeful beneficiaries of this mighty chemical cousin of resveratrol. Be on the watch for this rising star

Your healthmate Deanna Dean

ihealthbulletin.com/.../news-from-usda-about-pterostilbene/

Pterostilbene's Healthy Potential: November/December 2006 issue of Agricultural Research magazine

Agnes M. Rimando: USDA-ARS Natural Products Utilization Research Unit, P.O. Box 8048, Oxford, MS 38677-8048

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Dee is a Wellness & Weight Loss Coach, a Certified Natural Health Professional, is pursuing an ND degree-Naturopathic Doctor, is a certified Raw Chef, certified in Dietary Guidelines from the Cooper Institute for Aerobics Research, former Personal Trainer, Yoga and Fitness Studio Owner, TV and Radio Guest. Health Columnist.

Deanna develops customized programs to enhance the health of her clients, educates, and coaches dieters for safe weight loss.



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What is Pterostilbene?

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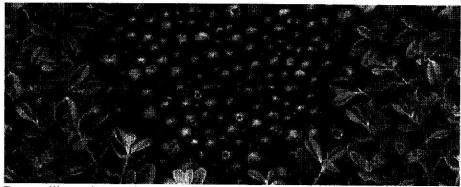
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What is Pterostilbene?

The berry-derived ingredient is proving to be a potent antioxidant and cardiovascular system supporter.

By Joanna Cosgrove

Published April 18, 2011
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Belonging to the phytoalexin class of compounds, pterostilbene is a protective compound produced by small berry plants like blueberries, cranberries, lingonberries and grapes to ward off the damage of pathogens such as bacteria or fungi. While such a complex biological process might be easy to overlook in such tiny berries, pterostilbene has been garnering quite a buzz in supplement circles where researchers are comparing its capabilities to those of resveratrol but with some decidedly interesting advantages in the realms of anti-aging, heart health, oxidative stress and memory support.

Pterostilbene and resveratrol both have the same role in the plant's defense system. "Resveratrol is one of the main phytoalexins in grapes, pterostilbene in blueberries," explained Jeremy Bartos, PhD, pTeroPure product manager for ChromaDex of Irvine, CA. "The only difference between the two is the presence of two methoxy groups in pterostilbene (resveratrol has three hydroxyl groups, pterostilbene has one along with the two methoxys).

It's the methoxy groups that make all of the difference when it comes to utilizing these compounds in the human body. "Resveratrol has two things going against it," said Dr. Bartos. "One is the fact that without the methoxy groups it is not as lipophilic (oil-soluble) as pterostilbene, so it's cellular uptake is much less than pterostilbene – pterostilbene can be taken through the cell's lipid bi-layer rather easily."

The second difference has to do with how pterostilbene is filtered through the human liver. "The liver acts as the gatekeeper to the body; it filters everything that comes through and compounds it does not recognize (such as pharmaceuticals, plant chemicals and toxins) it will tag for elimination from the body," said Dr. Bartos. "In the case with stilbenes such as resveratrol and pterostilbene the liver will typically glucuronidate (add a glucuronic acid molecule, a compound very similar to glucose) or sulfate any free hydroxyl groups it can find. Since resveratrol has three hydroxyl groups it is tagged for elimination much quicker and easier than pterostilbene with only one hydroxyl group, leading to a half-life in the blood of ~14 minutes compared to ~105 minutes for pterostilbene."

To underscore his comment, Dr. Bartos pointed to a recently published paper which confirmed the bioavailability of pterostilbene as being "three to four times greater than that of resveratrol," and noted that "systemic exposure to pterostilbene was substantially greater than was systemic exposure

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to resveratrol." (Cancer Chemotherapy & Pharmacology, 2010 Nov 30)

Canon of Research

Pterostilbene has been a part of the supplement research vernacular since the early 1990s but only became more well-known inthe mid 2000s. Much of the current pterostilbene research being conducted today mirrors the studies that made resveratrol a household word, Dr. Bartos explained.

A study published by the USDA in 2005 compared both pterostilbene and resveratrol to determine their ability to induce PPAR-alpha activation, which is involved in fatty acid and lipid catabolism as its activation leads to decreased triglyceride and very low density lipoprotein (VLDL) synthesis. "It was shown in the study that pterostilbene activated PPAR-alpha *in vitro* better than all compounds tested, including both resveratrol and the pharmaceutical ciprofibrate," said Dr. Bartos. "Subsequer structural and *in vivo* studies confirmed the correlation between pterostilbene's activation of PPAR-alpha and cholesterol lowering. In fact, the first human clinical trial on pterostilbene currently underway at the University of Mississippi has cholesterol as its primary endpoint."

A second study compared the ability of resveratrol and pterostilbene to protect cells against oxidative stress. "A collaboration of scientists from Tufts University and the USDA measured the ability of several plant polyphenols to protect cells from damage caused by oxidative stress and found that while pterostilbene was able to protect the cells, resveratrol was not. This is important for several reasons," Dr. Bartos recalled. "First of all, the buzz around the industry is 'anti-oxidant' and 'ORAC,' (Oxygen Radical Absorbance Capacity), a quick and dirty way to measure the potential ability of a compound to neutralize free radicals before they cause oxidative damage."

The problem with ORAC is that it only measures potential of a compound, not the actual ability, he said. "High ORAC compounds may have all the potential in the world, but if they can't get to where they need to be in order to do the job they are supposed to be doing (in this case neutralizing free radicals) then the potential is never realized. So it is important to note that scientists went even further to show that pterostilbene's ability to protect cells from oxidative damage can be seen in animal models as well as cell models.

"This is important because it shows that pterostilbene has the ability to localize in the places where it can be used," he continued. "Oxidative damage seems to be at least partially responsible for aging disease such as Alzheimer's. The scientists showed a direct correlation between the levels of pterostilbene in rat's hippocampus (memory center of the brain) and their ability to remember how to run a maze, showing that pterostilbene's protection against oxidative stress can be translated to behavioral changes as well."

The most noteworthy up and coming pterostilbene studies will focus on sirtuin activation. "One of the latest papers is entitled 'Pterostilbene Is More Potent than Resveratrol in Preventing Azoxymethane (AOM)-Induced Colon Tumorigenesis via Activation of the NF-E2-Related Factor 2 (Nrf2)-Mediated Antioxidant Signaling Pathway,' [which] directly compares the abilities of pterostilbene and resveratrol to inhibit the formation of colon tumors in mice based on their anti-oxidant abilities alone," said Dr. Bartos. "They found that while both pterostilbene and resveratrol were able to inhibit tumor formation by enhancing expression of antioxidant enzymes via activation of the Nrf2 protein, pterostilbene was significantly more potent than resveratrol."

Market Potential

Because pterostilbene is still in its relative infancy, its market size and potential is somewhat difficult to calculate. Dr. Bartos said the first pterostilbene products were rolled out directly to physicians. Niche mail and Internet order markets are the next distribution phase, with retail venues as phase three. ChromaDex's pTeroPure brand pterostilbene enjoyed a retail debut earlier this year and has steadily gained traction with larger retail companies—a phenomenon that should be bolstered over the next few weeks when the ingredient attains self-affirmed Generally Recognized As Safe (GRAS) status.

"With this hurdle behind, pTeroPure is no longer limited to the nutraceutical market and can be included in functional foods such as granola bars, cereal, yogurt, etc.," said Dr. Bartos. "Imagine a cheese product that contains an ingredient that can improve your heart health, or a cookie that contains a compound used for centuries to support blood sugar levels."

Research has suggested that pterostilbene and resveratrol can also work synergistically to protect cells from damage caused by oxidative stress and, in fact, may be more effective together than if used separately. To that end, last month Nutraceutical International Corporation added a new resveratrol and pTeroPure pterostilbene combination product to its Solaray Guaranteed Potency line of products.

In addition to the supplement market, ChromaDex also has high expectations for success with pTeroPure in the cosmetics market. "Because pterostilbene is lipophilic (oil-soluble), not only is it compatible with oil-based creams, but it also has fantastic uptake in to the cells because it can easily get through the cell's lipid bilayer," Dr. Bartos said. "This allows the ability to absorb a powerful anti-oxidant right into the skin where it can work to limit damage associated with aging. Recent experiments with the bacteria that causes acne have also shown promise."

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Resveratrol Series

Pterostilbene is a powerful antioxidant and may be able to help to lower bad cholesterol levels and prevent heart disease. It was called next generation of resveratrol. We have realized mass production of

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DESCRIPTION

Resveratrol-M provides pterostilbene, a methylated resveratrol that is naturally occurring in berries. This formula also contains resveratrol, curcumin and vitamin D3 which can function synergistically with ptersostilbene to support healthy aging.

Pterostilbene is considered the next generation of resveratrol. Pterostilbene has advantages over resveratrol: superior biological activity, better oral bioavailability, and slower metabolism in the body. pTeroPure pterostilbene is a nature identical form of transpterostilbene, a stilbene found in certain berries.

Both pterostilbene and resveratrol support mitochondrial function and healthy aging by activating SIRT1, one of the key enzymes of the sirtuin family. Sirtuins, a class of proteins, have been implicated in influencing aging and regulating transcription, apoptosis and stress resistance, as well as energy efficiency and alertness during low-calorie situations. Pterostilbene also supports cardiovascular health; results from in vitro studies showed that pterostilbene acts as a PPARR agonist and may be a more effective PPARR agonist and hypolipidemic agent than resveratrol.

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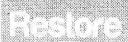
Other Ingredients: Cellulose (capsule), calcium citrate, microcrystalline cellulose, vegetable stearate, silica and titanium dioxide.

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Resveratrol-MTM



A Methylated Formula for Healthy Aging and Cardiovascular Support[†]

A DIETARY SUPPLEMENT

DESCRIPTION

Resveratrol-M^{***} provides pterostilbene, a methylated resveratrol that is naturally occurring in berries. This formula also contains resveratrol, curcumin and vitamin D3 which can function synergistically with ptersostilbene to support healthy aging.†

FUNCTIONS

Pterostilbene, a methylated form of resveratrol is considered the next generation of resveratrol. Pterostilbene has advantages over resveratrol. superior biological activity, better oral bioavailability, and slower metabolism in the body, pTeroPure™ pterostilbene is a nature identical form of transpterostilbene, a stilbene found in certain berries. The enhanced activity of pterostilbene compared to resveratrol may, in part, be explained by structural differences. Pterostilbene with two methoxy groups and one hydroxyl group has greater lipophilicity and a higher potential for cellular uptake than resveratrol. which has three hydroxyl groups. Pterostilbene showed strong inhibitory activity, much more than resveratrol, against a particular form of cytochrome P450. Researchers have suggested that these two compounds also work synergistically, supporting the theory that a combination of pterostilbene and resveratrol in a formulation may be more effective than using these ingredients separately.

Both pterostilbene and resveratrol support mitochondrial function and healthy aging by activating SIRTI, one of the key enzymes of the sirtuin family. Sirtuins, a class of proteins, have been implicated in influencing aging and regulating transcription, apoptosis and stress resistance, as well as energy efficiency and alertness during low-calorie situations.† Pterostilbene also supports cardiovascular health; results from in vitro studies showed that pterostilbene acts as a PPARR agonist and may be a more effective PPARR agonist and

hypolipidemic agent than resveratrol. In vivo studies demonstrate that pterostilbene possesses lipid and glucose lowering effects.†

Resveratrol-M™ also contains Resvida™, a pure resveratrol clinically studied for its safety. Resvida resveratrol is unique as it is not a plant extract and is not derived from plant sources, therefore presents no risk for contamination with pesticides and other potentially unwanted compounds. Studies indicate resveratrol may be supportive in maintaining the normal aging process by helping to prevent free radical damage that can lead to premature aging of cells.† Studies have shown that curcumin, a naturally occurring group of compounds from turmeric. function as powerful antioxidants and can help support neurological and cardiovascular function.† Since curcumin exhibits poor oral absorption in the body. Douglas Labs has chosen a highly bioavailable curcumin called MERIVA®. Pharmacokinetic comparison studies have shown MERIVA® to have up to a 20-fold improvement in bioavailability versus the standard 95% turmeric extracts due to proprietary PHYTOSOME technology which increases hydrolytic

Vitamin D, curcumin and resveratrol/pterostilbene share many common targets and points of overlap in gene regulation, signal transduction and therapeutic effects. The nature of this overlap suggests synergy upon combination, potentially leading to an influence on inflammatory and cardioprotective pathways. Japanese wasabi with a specially standardized broccoli sprout concentrate and organic pomegranate extract are added to this formula to support the body's natural antioxidant and detoxification processes.† Sulforaphane, an ITC found in broccoli, has been found to significantly increase the activity of detoxification enzymes (cytochrome P450).

INDICATIONS

Resveratrol- M^{TM} is a methylated formula for healthy aging and cardiovascular support.

FORMULA (#200901)

1 Vegetarian Capsule Contains:

Vitamin D-3	1000 IU
MERIVA® Curcumin Phytosome	
Resveratrol (as trans-resveratrol)	100 mg
Pterostilbene (pTeroPure™)	50 mg
Proprietary Cruciferous	150 mg

Vegetable and Fruit Blend:

Wasabia japonica (rhizome, providing 600 mcg total glucosinolates), Broccoli powder (sprout) (BroccoPhane™) (standardized to contain 200 mcg of sulforaphane) and Organic Pomegranate powder (fruit).

Other ingredients: Cellulose (capsule), calcium citrate, microcrystalline cellulose, vegetable stearate, silica and titanium dioxide.

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SUGGESTED USE

Adults take 1 capsule daily with meals or as directed by your healthcare professional.

SIDE EFFECTS

No adverse side effects reported.

STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

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ABOUT SSL CERTIFICATES Resveratrol & Pterostilbene May Support Cognitive Function 12/05/11



Resveratrol and pterostilbene (pronounced "tero-STILL-bean") are closely related antioxidant compounds that have much in common. Both are aromatic hydrocarbons called "stilbenes," both are produced by some plants as part of the plant's natural defense system, and both compounds have demonstrated significant potential health benefits. Specifically, both resveratrol and pterostilbene have been linked to distinct heart health, memory, anti-inflammatory, and antioxidant benefits.

In recent years there has been a tremendous amount of research conducted on resveratrol, and an increasing amount of research on pterostilbene, which some have started to call "next generation resveratrol." Structurally, the two molecules

are nearly identical. The only difference between the two is that pterostilbene replaces a methoxy group for one of the hydroxy groups on resveratrol. That difference seems to make pterostilbene more biologically active than resveratrol and gives pterostilbene a longer half-life in the body (meaning it spends more time in the body after consumption).

Two new studies on lab mice indicate that both resveratrol and pterostilbene may support brain health, with pterostilbene yielding better results than resveratrol. 1,2

The first of the two studies, which was conducted at Case Western Reserve University in Cleveland, OH, studied the effects of low-dose resveratrol and low-dose pterostilbene on a mouse model of Alzheimer's Disease. For the study, mice genetically predisposed to develop age-related cognitive decline were fed either identical doses of resveratrol or pterostilbene for two months. The doses were said to be approximately equal to a human drinking two glasses of red wine daily.

The researchers found that both resveratrol and pterostilbene improved cognitive function, however the pterostilbene also reduced markers of cellular stress and inflammation, while resveratrol did not. Keeping with previous studies, the researchers associated these results with pterostilbene's chemical structure. The researchers stated that "the substitution of the hydroxy group of resveratrol with a methoxy group in pterostilbene makes this molecule more lipophilic [fat-binding]. This change may lead to better bioavailability of pterostilbene and consequently a more potent neuroprotective effect in the brain." The researchers went on to explain that this theory is supported by the fact that they found higher levels of pterostilbene in both the blood and brain tissue of the mice.

The researchers point out that while it has not yet been demonstrated that pterostilbene has cognitive benefits in humans, there have been studies that have found cognitive benefits from eating blueberries. Blueberries have the highest levels of naturally occurring pterostilbene of any food, although these levels are still quite minute.

In the second study, Japanese researchers found resveratrol supported cognitive health at higher levels, but not at very low levels. For the study, the researchers fed mice red wine that had been standardized to contain either 20mg or 3.1mg of resveratrol per liter. The mice were fed a mouse-sized portion, equivalent to one glass of wine to a human.

The natural levels of resveratrol in red wine vary greatly from varietal to varietal, and season to season. According to the authors of this study, the average concentration of resveratrol in red wine is roughly 4.7 mg per liter.

The researchers found that the wine with the high resveratrol concentration (20mg/L) improved cognitive function in mice, but the low concentration did not.

Given that the average resveratrol level in wine is higher than the low level tested, and that people tend to drink more than one glass of wine at a time, the researchers concluded that "drinking red wines with regular concentrations of resveratrol for long periods lowers the risk of age-associated cognitive



decline." They went on to state that their findings on resveratrol "may explain at least in part the beneficial effects of moderate consumption of red wine on cognitive function in humans."

These results taken into context with the first study seem to indicate that while resveratrol may have some benefits at low levels, the amount of resveratrol required for cognitive benefits may be greater than the levels obtained from mild-to-moderate wine consumption. This would indicate that supplementation is not only a good alternative for those who do not want the alcohol and calories associated with wine, but it may also be a good supplement even for those who already consume moderate amounts of red wine.

Whole Health offers resveratrol & pterostilbene together in a single product in addition to several other resveratrol products, including:

- three products that use Ultra-Pure Fluxome Resveratrol from natural fermentation,
- · two resveratrol products from Japanese Knotweed,
- · VitaBev effervescent multivitamin drink with resveratrol,
- · PomeHealth Pomegranate and Resveratrol blend, and
- High-Potency Liver Detox & Support with resveratrol.

Find the one that is right for you and learn more about resveratrol and its potential benefits here.

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Introducing Pterostilbene: The "Other" Resveratrol

Share Tweet By Michael A. Smith, MD

By now, just about everyone has heard about what my dad calls "the red wine supplement" — resveratrol.

Unfortunately, only a few people (mostly Life Extension members) have heard about its cousin: pterostilbene.

Well, as we predicted, pterostilbene is now making headlines. It turns out this antioxidant powerhouse may be even better than its famous cousin for boosting brain health.

What is Pterostilbene?

Pterostilbene, found in blueberries, grapes, and in the bark of the Indian Kino Tree, has been used for centuries in Ayurvedic medicine. Pterostilbene and resveratrol are both stilbene compounds. They're closely related structurally, which gives them similar but not identical functions.

Researchers have found that these two compounds work in a synergistic way to activate your "longevity genes." Scientists have found that resveratrol first activates what are called upstream genes. These genes, in turn, then activate a number of additional disease-preventing genes that are involved in downstream metabolic reactions. In essence, resveratrol's beneficial genetic action has a controlling effect on other genes.

Pterostilbene directly activates the genes that are "downstream" from the sites of resveratrol's action. This complements resveratrol's ability to help prevent cancer and diabetes, and helps support healthy blood lipids. Acting together, resveratrol and pterostilbene produce potent, longevity-promoting effects across the cycle of gene expression through complementary mechanisms.

However, new research is pointing towards pterostilbene as the next generation brain booster. Below we'll take a look at the latest study showing the powerful benefits it promises for your noggin.

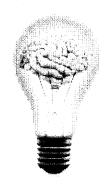
Pterostilbene Helps Old Mice Think Better

Both resveratrol and pterostilbene offer remarkable effects for both learning and memory. Although both compounds have shown benefit in this regard, it's pterostilbene that was found to be most effective at preventing loss of the neurotransmitter dopamine from memory centers in aged rats. ¹

In the latest cognitive study² done on rats, published in Neurobiology of Aging, again it was pterostilbene that showed the real benefit — not resveratrol. Two months of a pterostilbene-based diet significantly improved the rats' performance during a standard memory test called the radial arm water maze when compared with control-fed animals.

Importantly, markers of cellular stress, inflammation, and nerve cell damage were reduced by pterostilbene but not by resveratrol. The way that pterostilbene helps your body hasn't been fully understood yet, but the study's

authors believe that it positively influences an important inflammation regulator called PPAR — or peroxisome proliferator-activated receptor. PPAR is actually involved in many physiological reactions. ²The researchers concluded, "... pterostilbene is a more potent modulator of cognition and cellular stress than resveratrol."



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One Giant Leap for Rat-kind?

We know what you're probably thinking: These are rats! Sure, but all research has to start somewhere. Of course large-scale clinical trials on humans would be ideal, but unless you have a few million dollars to spare, they're out of reach. However, smaller studies on humans are currently in the works.

As little as we like to admit it, rat brains really aren't that different from human brains. Although it may seem like a leap, something that helps a rat think better is likely to help you think better too.

What do you think? Let us know in the comments!

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 (http://www.neurobiologyofaging.org/article/50197-4580(11)00337-X/abstract)

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Pterostilbene

Product No.: #1503

Product name: Pterostilbene

1. Source: Polygonum cuspidatum Sieb Et Zucc

2. Part of the plant used: roots
3. Extract ratio: 100~150: 1

3. Specifications: Pterostilbene>99%

4. Product description

Pterostilbene, a structural analog of resveratrol, is called the *next generation of resveratrol*. Pterostilbene was originally isolated from the heartwood of red sandalwood (*Pterocarpus santalinus*). Its presence in grape vines and blueberries was also reported later. Like resveratrol, Pterostilbene belongs to a class of compounds called phytoalexins. Pterostilbene and resveratrol have very similar pharmacologic, properties, however Pterostilbene has several key advantages over resveratrol, superior biological activity, better oral bioavailability and slower metabolism in the body.

5. Benefits

Strong antioxidant

May be a potent anti-aging compound Potent anti-inflammatory activity Prevents neuro-degeneration Prevents damage of oxidative stress.

Mimics calorie restriction Improves heart health

Can be used to maintain healthy cholesterol levels.

Orally active and works to decrease plasma glucose levels in some animals.

Identified as an antiviral compound with broad target specificity. Inhibits expression of certain inflammation-related genes in the colon.

Potential for cancer chemo-prevention.

6. Advantages

All the production process complies with the GMP standard strictly

Kosher, GMP certificated

Low ash, impurity, heavy metal, solvent residue and no pesticide residue

Water and ethanol as solvent, ensure the safety of the product Complete product tracing system and technique support

7. Application

Health food, beverage, dietary supplement, and cosmetic.

8. Packing:

According to the customers' requirement, inner packing is aluminum bag inside with double layer plastic bags.

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December, 2010

Welcome to the December edition of ChromaDex eNews!

While the economic and regulatory climate of 2010 presented the industries served by ChromaDex with some challenges, ChromaDex continued developing new products and services for our clients.

We "set THE standard" for phytochemical reference standards, and our reference standard line now exceeds 4000 unique materials. Every week we are adding new Botanical Reference Materials (BRMs) to our portfolio of products. From identity testing of raw materials to in process tests to final product testing, ChromaDex provides the complete range of phytochemical reference standards needed to be cGMP compliant.

ChromaDex continues to commit resources to our Contract Services Group. In 2010 we added a new Q-TOF Mass Spectrometer to our analytical arsenal. Our world class team of natural product and analytical chemists has dramatically expanded our range of contract services and research capabilities. ChromaDex has increased its chemical synthesis capabilities to provide products equivalent to natural ones but produced via synthetic routes.

ChromaDex now offers fine, specialty ingredients for use as a dietary supplement. Beginning with high purity resveratrol, ChromaDex just added pTeroStilbene to its new pTeroPure line of dietary supplement ingredients, and we expect that 2011 will be an exciting year for this emerging product line. Several additional specialty ingredients for dietary supplement use are also planned for launch.

We appreciate your business and wish you a prosperous new year. Happy Holidays from all

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Articles

The 2011 ChromaDex Catalog is Here!

The ChromaDex 2011 phytochemical product catalog is the definitive source of reference materials for the dietary supplement industry. ChromaDex provides the industry with the analytical and research tools needed to meet the requirements of the Food and Drug Administration's (FDA) Good Manufacturing Practice Regulations.



ChromaDex has added over 1,000 new products to its portfolio, which brings the total found in the new catalog to over 4,000 phytochemical and botanical reference materials. A few of the

new items include an all-in-one JECFA Stevia test kit, 200 new botanical reference materials and an extensive natural product extract library for use in high-throughput screening.

Additionally, the enhanced Product Selection Guide provides a fast, easy way to locate the relevant standards for almost any botanical. The catalog also outlines the comprehensive testing and research capabilities available from ChromaDex.

If you have not received the 2011 ChromaDex catalog, please contact your technical representative or fill out our online request form.

Once you have made your product or service selection from the new 2011 ChromaDex Catalog, please contact your technical representative or sales@chromadex.com to take advantage of our limited time rewards offer ending December 23, 2010.

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ChromaDex Partners with Kappa Bioscience to Provide Quality Control Methods, Tools and Services for Vitamin K2

ChromaDex announced that it has entered into a global agreement with Kappa Bioscience AS (Oslo, Norway) to supply analytical reference standards, quality control methods and related analytical testing services for Vitamin K2, Menaquinone-7(MK-7) in raw materials and finished.

Read more

Pterostilbene - The Next Generation Resveratrol

Pterostilbene (tero-STILL-bean) is a natural analog of resveratrol found in certain berries such as blueberries, cranberries, sparkleberries, lingonberries, and grapes. Like resveratrol, it belongs to a class of compounds called phytoalexins, which are naturally produced by plants when under attack by pathogens such as bacteria or fungi. And like resveratrol, there are animal studies showing it's efficacy at improving heart health, most notably by correcting the dyslipidemia that leads to atherosclerosis and coronary heart disease (Rimando 2005; Pan



2008; Mizuno 2008).

pTeroPure Pterostilbene is a nature-identical, 99+% pure, all-trans pterostilbene. The pTeroPure brand pterostilbene is superior to natural extracts due to its high purity and its sustainable source material. The majority of the pterostilbene ingredients on the market are extracts made from Pterocarpus marsupium, an endangered tree found in India. The amounts of pterostilbene found in the Pterocarpus heartwood are low, leading to concentrated extracts typically in 5-25% range, meaning that there is 75-95% of something else besides pterostilbene in these extracts. The fact that Pterocarpus is an endangered species further limits its use as a viable and sustainable source of pterostilbene. Even though pterostilbene is found in blueberries and other small berries, it is typically in the 25-50ppm range, too small to be commercially viable. Because pTeroPure pterostilbene is synthetic, its starting material is a renewable and sustainable resource. ChromaDex is currently working towards GRAS for pTeroPure pterostilbene, and anticipates completing a self-affirmed GRAS study in early spring 2011 with a letter of no objection from the FDA a short time afterwards. pTeroPure Pterostilbene can currently be found in finished products from companies such as Thorne Research, Jarrow Formulas, Gaspari Nutrition, Ortho Molecular Products, Health Resources, Xymogen, and Douglas Laboratories. We are excited about the prospects for broad commercial use of Pterostilbene.

Read more

ChromaDex 99% Pure Curcumin

Curcumin has recently been gaining favor as an immune system contributor, with beneficial effects reported in arthritis, allergy, asthma, atherosclerosis, heart disease, Alzheimer's disease, cancer, and diabetes. With a market low on the turmeric biomass required for curcuminoid extraction, ChromaDex is now offering high purity (99%) curcumin. Nature-identical ChromaDex curcumin is superior to mixed curcuminoids extracts due to its high purity and its sustainable source material. Most available high purity turmeric extracts contain up to 77% curcumin, 17% demethoxycurcumin, and 3 % bisdemethoxycurcumin.



ChromaDex Curcumin has approximately 25% more curcumin by weight than the average 95% curcumin (mixed curcuminoids) extracted from turmeric, and it does not contain the additional bioinactive impurities that are also common in natural extracts. Please contact your ChromaDex representative today for pricing or to receive a sample.

Read more

EVENTS

Nutracon 2011 March 9-10, 2011 Anaheim, California, USA

Nutracon is the premier conference for ingredient and technology innovation within the health and nutrition



industry. The conference helps companies develop new science-supported products in the supplements, functional foods and beverages, and nutricosmetics sectors. At Nutracon you'll find invaluable insight on current, impactful science and business information in four tracks central to the industry's direction Nutracon will help your business stay in front of the competition. This cutting edge event rounds out with engaging networking opportunities to help you connect with important people and ideas in the industry.

For more information, visit www.nutraconference.com.

SupplyExpo & Natural Products Expo West 2011

March 11-13, 2011 Anaheim, California, USA

The best in the industry gather each year at SupplyExpo for exhibits featuring new ingredients, technologies, applications and services for healthy/functional food and beverage, dietary supplement/bioactive and nutricosmetic markets, as well as outstanding education and events. Whether you've been in the industry for forty years or you've just entered, SupplyExpo helps connect you to solutions for your success.

Co-located, Natural Products Expo West is the world's largest natural, organic and healthy products trade show. See new products from over 3,000 exhibits while networking with nearly 56,000 professionals and neets.



For more information, visit www.supplyexpo.com and www.expowest.com.

ChromaDex will be exhibiting at booth #122 . pTeroPure will be exhibiting at booth #359.

Stop by to speak with one of our representatives.



Privacy Policy

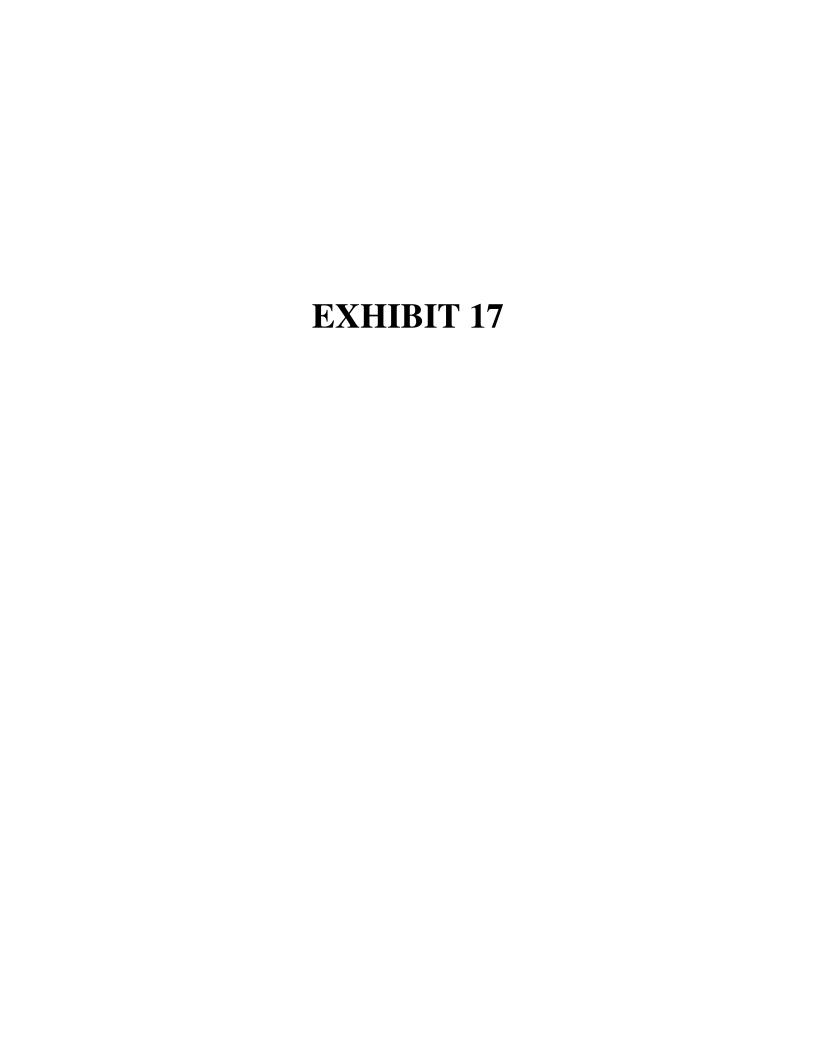
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Brand Names	Products	Health Links
		Edit Cart & Check Out
Free Shipping U.S. orders over \$20.00!	Search	0 items in cart Subtotal: \$0.00
Natural Products & More		:0: 1:1 0 2 1
Herb.com	Hot Deals! Trials Movers New Freebies!	View Cart Re-Order My Account



roll over to magnify

Medicinal Nutraceutics, Pterostilbene, 100 mg Each, 60 Veggie Caps

SRP: \$39.95

Our price: \$29.96

Savings of: \$9.99 (25% Off)

Rate it

In Stock: Yes

Visit manufacturer's web site Shipping Weight 0.14 lbs (0.06 kg) Product Code: MED-27933 UPC Code: 094922279330

Package Quantity: 60 Veggie Caps

Dimensions: $1.7 \times 1.7 \times 3.3$ inches, 0.12 lbs $(0.05 \, \text{kg})$

E Like this Tweet

Expiration Date: April 2014

Top lik Reasons to Shop at iHerb!



Add to Cart

Wish List

Customers who bought this product, also bought any or all of the following products:







Product Details

Write Reviews

Description

- * Dietary Supplement
- * The Next Generation Resveratrol

Pterostilbene is a natural phytochemical found in small berries has been clinically shown to promote normal blood glucose and cholesterol levels, assist the body to normalize blood pressure and control soft tissue inflammation, improve cognitive function, and enhance the genetic benefits of calorie restriction.

Suggested Use

Depending on your state of health or nutritional goals, take 1 capsule once or twice daily with meals, or as recommended by your health care provider.

Supplement Facts

Supplement Facts		
Serving Size: 1 100 mg Veggie Capsules		
Servings Per Container: 60		
	Amount per Capsule	% DV
Pterostilbene (Pterocarpus marsupium)	100 mg	t
† Daily Value not established		I

Other Ingredients

 $\label{thm:local_prop_local} \textit{Hydroxypropylmethylcellulose} \ (\textit{vegetarian capsule}), \ \textit{methylcellulose}, \ \textit{silicon mineral complex}, \ \textit{I-leucine}.$

Hypoallergenic: This product does not contain milk, eggs, soy, fish, crustacean shellfish, tree nuts, peanuts, wheat, gluten, yeast, salt, preservatives, artificial color, flavor, or fragrances.

Warnings

Keep out of the reach of children.



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EXHIBIT 18





About Us Pterostilbane Products News Contact Us



Products - Overview

pTeroPure Pterostilbene is provided in clinically relevant amounts via the fine products below. Please click on the product pictures to research the benefits of each unique supplement.

















































Date Bar & Cereal Bar



Site Map ChromaDex.com Terms & Conditions Privacy



EXHIBIT 19

AARON SHECHET Counsel@SolutionsLLP.com CHANDLER & SHECHET, LLP 1844 Bagley Avenue Los Angeles, CA 90035 Telephone: (310) 339-1354

Facsimile: (310) 558-1519

Attorneys for Opposer Biotivia, LLC

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

In the matter of trademark application Seria For the mark: THE NEXT GENERATION	
Published in the Official Gazette on Augus	t 23, 2011
x	
BIOTIVIA, LLC	Opposition No.: 91202162
	INITIAL DISCLOSURES OF
Opposer	OPPOSER, BIOTIVIA, LLC
v.	
CHROMADEX, INC. Applicant	
X	

Pursuant to *Trademark Rule 2.120* and *FRCP 26(a)*, Opposer Biotivia, LLC ("Biotivia") makes the following initial disclosures:

I. PERSONS LIKELY TO HAVE DISCOVERABLE INFORMATION

Biotivia identifies the following persons pursuant to Federal Rule of Civil Procedure 26(a)(1)(A) as likely to have discoverable information that may support Plaintiff's claims:

- 1. James Betz, PhD
 - i. Via Nazario Sauro, 2 37129 Verona Italia; +39 340 294 1659
 - ii. Knowledge of Pterostilbene and the effect of the mark on competitors.
- 2. Philip Akers, MBA
 - i. 322 Jalan Ahmad Ibrahim, Singapore 629151; +39 340 294 1659
 - ii. Knowledge of Pterostilbene and the effect of the mark on competitors.

Biotivia's initial disclosure of persons likely to have discoverable information is in no way intended to be a waiver of any applicable privileges. Biotivia specifically reserves the right to modify or supplement its list of persons likely to have discoverable information as may be

appropriate based upon, among other things, discovery conducted in this action and the initial disclosures of the Applicant, Chromadex.

II. DOCUMENTS

Pursuant to Federal Rule of Civil Procedure 26(a)(1)(A)(ii), Biotivia is including copies of all documents, electronically stored information, and tangible things that the disclosing party has in its possession, custody, or control and may use to support its claims, unless the use would be solely for impeachment.

Biotivia specifically reserves its right to supplement the above as may be appropriate in the event of subsequently discovered facts, information, documents, or witnesses which warrant the supplementation of its description of documents, including but not limited to, the production of documents obtained in discovery and through disclosures by Chromadex.

DATED: January 23, 2012 CHANDLER & SHECHET, LLP

Bv:

AARON SHECHET Attorneys for Opposer, BIOTIVIA, LLC

CERTIFICATE OF SERVICE (37 C.F.R. §§ 2.101, 2.119

I, AARON SHECHET, Attorney of Record for Opposer, Biotivia, LLC, hereby certify that a true and correct copy of:

- 1) INITIAL DISCLOSURES OF OPPOSER, BIOTIVIA, LLC,
- 2) A DVD containing electronically stored copies of documents pursuant to Federal Rule of Civil Procedure 26(a)(1)(A)(ii), and
- 3) Copies of documents (58 pages).

Was served by Certified first class mail of the United States Postal Service, upon:

JOSEPH T. NABOR FITCH EVEN TABIN & FLANNERY 120 S LASALLE ST STE 1600 CHICAGO, IL 60603-3590

Date of Mailing: January 23, 2012

Aaron Shechet

Carolecas

EXHIBIT 20





September 8, 2011

Corporate Presentation

Safe Harbor Disclaimer

This presentation and other written or oral statements made from time to time by representatives of ChromaDex contain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements reflect the current view about future events. Statements that are not historical in nature, such as our fiscal year 2011 revenue projection, and which may be identified by the use of words like "expects," "assumes," "projects," "anticipates," "estimates," "we believe," "could be," "future" or the negative of these terms and other words of similar meaning, are forward-looking statements. Such statements include, but are not limited to, statements contained in this presentation relating to our business, business strategy, products and services we may offer in the future, sales and marketing strategy and capital outlook. Forwardlooking statements are based on management's current expectations and assumptions regarding our business, the economy and other future conditions and are subject to inherent risks, uncertainties and changes of circumstances that are difficult to predict and may cause actual results to differ materially from those contemplated expressed. We caution you therefore against relying on any of these forward-looking statements. These risks and uncertainties include those risk factors discussed in Part I, "Item 1A. Risk Factors" of our Annual Report on Form 10-K for the fiscal year ended January 1, 2011 (the "2010 Annual Report") and our Quarterly Report on Form 10-Q for the fiscal guarter ended April 2, 2011 (the "2011 Quarterly Report"). Any forward-looking statements are qualified in their entirety by reference to the factors discussed in the 2010 Annual Report and the 2011 Quarterly Report. Should one or more of these risks or uncertainties materialize, or should the underlying assumptions prove incorrect, actual results may differ significantly from those anticipated, believed, estimated, expected, intended or planned.

Important factors that could cause actual results to differ materially from those in the forward looking statements include: a continued decline in general economic conditions nationally and internationally; decreased demand for our products and services; market acceptance of our products; the ability to protect our intellectual property rights; impact of any litigation or infringement actions brought against us; competition from other providers and products; risks in product development; inability to raise capital to fund continuing operations; changes in government regulation, the ability to complete customer transactions and capital raising transactions.

Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We cannot guarantee future results, levels of activity, performance or achievements. Except as required by applicable law, including the securities laws of the United States, we do not intend to update any of the forward-looking statements to conform these statements to actual results.





Health Claims Disclaimer

Statements made in this presentation have not been evaluated by the Food and Drug Administration. ChromaDex products are not intended to treat, cure, prevent or mitigate any disease. The statements in this presentation are for investor relations and educational purposes only and not intended for consumers or vendors.





Company Profile

- Science-based company specializing in the high-growth natural products industry
- Strong legacy business model provides early access to high-potential proprietary products
- First major proprietary product, pleropure, has enormous potential in multiple market channels
- Strong and growing product pipeline, significant IP

ChromaDex is poised for rapid growth





Company Profile (cont'd)



Irvine, CA



Boulder, CO

- Ticker symbol: CDXC.OB
- Market cap: ~\$75M, ~70 employees
- ~\$3M in cash, no debt

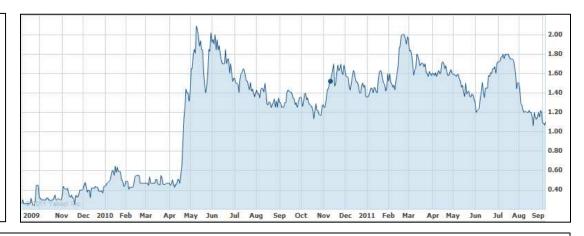
Internal plan for revenue growth from ~\$12M in 2011 to over \$100M in 3-5 years





Company Profile (cont'd)

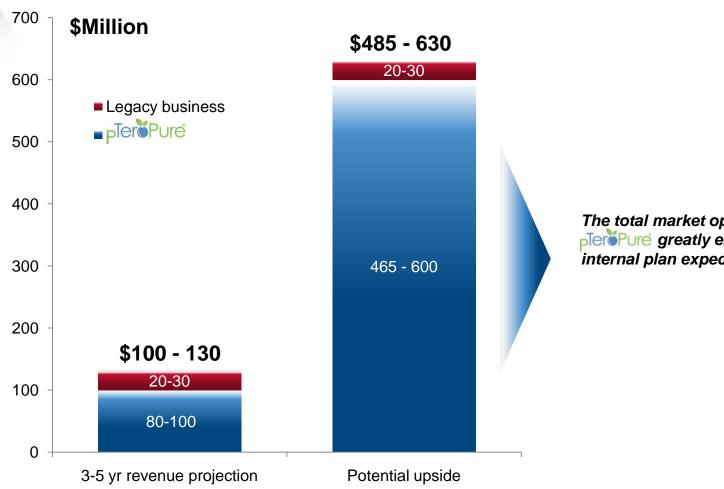
Common stock ownership			
Dr. Phillip Frost	19.3%		
Frank Jaksch	10.3%		
Key investor	8.4%		
Key investor	5.9%		
Key investor	4.9%		
Key investor	4.5%		
All others	46.6%		
Total	100%		



Key individuals	<u>Profile</u>	<u>Role</u>
Frank Jaksch	Founded ChromDex in 1999. Previously managed international divisions at Phenomenex, worked in diagnostics division of ICN Pharmaceuticals	CEO
	B.S. Chemistry & Biology, Valparaiso University	
Bill Spengler	Former EVP and CFO at MGI Pharma and Guilford Pharmaceuticals, VP Finance at Black & Decker, CFO at Smith & Wesson, currently member of Board of Directors at Endo Pharmaceuticals	President
	B.A. Yale, MBA NYU Stern	
Dr. Phillip Frost	Miami entrepreneur and technology investor CEO of OPKO Health (NYSE Amex: OPK), founder of IVAX, Vice Chairman of Teva Pharmaceuticals	Key investor



ChromaDex has focused 3-5 year plans and a huge potential upside



The total market opportunity for Fier Pure greatly exceeds internal plan expectations





Three keys to rapid growth at ChromaDex

- 1. Fully commercialize pteroPure, ChromaDex's first proprietary product to market, including retail launch of the BlūScience brand
- 2. Expand the legacy business
- 3. Develop follow-on pipeline of proprietary products with intellectual property





Pure was identified and developed through ChromaDex's legacy business . . .

The legacy business:

- Natural Product fine chemicals (phytochemicals and botanicals for laboratory-based R&D and QA)
- Analytical and Chemistry-based Services (CRO)





ChromaDex's legacy business brings sciencebased products & services to the natural products industry

Natural product fine chemicals



- Used for QA, R&D
- 3000+ Plant-based fine chemicals
- 800+ Botanicals
- Comprehensive collection of these in form of natural product libraries

Analytical & chemistry-based services



- Testing for identity, potency, safety
- Manufacturing R&D
- QA / QC & regulatory consulting





Cosmeceuticals

Pharmaceuticals

























The legacy business is poised for rapid growth based on trends within the Natural Products Industry

Driver of Growth

Marketplace Examples

Implications

Consumer demand

 Natural products industry expected to reach \$155B by 2015¹ Higher demand for natural product libraries & QA services

Increased regulatory activity

 FDA implementation of GMPs for dietary supplements

Higher demand for services & references standards

Industry consolidation

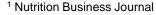
 PE investment / acquisition activity in dietary supplement companies Professional management teams more keen to ensure quality and mitigate risk

Increased R&D

- Nestlé Health Sciences S.A.
- Pepsi Global Nutrition Group
- Others

Higher demand for services & references standards

Internal plan for legacy business revenue of \$20-30M in 3-5 years







Market examples of blue-chip strategic investment in the natural products industry



"The market potential is significant . . . I believe we are well equipped to deliver authentically nutritious products advantaged by science in an accessible and affordable way to consumers globally."

- Indra K. Nooyi, Chairman & CEO, PepsiCo



"The combination of health economics, changing demographics and advances in health science show that our existing healthcare systems, which focus on treating sick people, are not sustainable and need redesigning. Nestlé has the expertise, the science, the resources and the organization to play a major role in seeking alternative solutions."

-Nestlé Chairman Peter Brabeck-Letmath





The Legacy Business provides market intelligence for the identification and development of Proprietary Products

LEGACY BUSINESS MARKET INTELLIGENCE INTELLECTUAL PROPERTY

PROPRIETARY PRODUCTS

- Consumer Goods
- Pharmaceuticals
- Governments
- Universities & Research Institutions
- Patents:
 - Health Claims
 - Manufacturing Processes
- "Know how"

- Ingredients
 - Supplements
 - Food & Beverage
- Retail supplement brand
- Skin care
- Pharmaceutical

pTereror is the first of these proprietary compounds to market





pTere Pure (ChromaDex-branded pterostilbene) will be a blockbuster in the field of human health

- Pterostilbene is a *phytoalexin* (plant defense system) found naturally in blueberries
- A polyphenol similar to resveratrol, it has a 7x longer half-life and 10x more bioavailablity

ChromaDex has licensed patents pending related to:

- Cholesterol
- Oxidative stress / metabolic syndrome
- Non-melanoma skin cancer
- Anxiolytic activity
- Manufacturing process from an exclusive partner audited successfully by the FDA and TGA





Science Overview for Pure

Dennis Feller, Ph.D., *Professor Emeritus, Department of Pharmacology, University of Mississippi* on the history surrounding the studies related to pterostilbene

Agnes Rimando, Ph.D., Research Chemist at the USDA on her research surrounding pterostilbene.

Daniel Riche, Pharm.D., Assistant Professor, University of Mississippi School of Medicine, on the potential health benefits of pterostilbene and the human clinical study underway

Video - 5:08

http://investors.chromadex.com/phoenix.zhtml?c=212121&p=irol-investorKit





plero Pure is currently undergoing clinical trials

First human clinical study using pterostilbene

- ChromaDex in collaboration with the University of Mississippi
- Double-blind, placebo-controlled
- Endpoints: cholesterol, blood pressure, oxidative stress
- **4 arms** with 20 people per arm:
 - Placebo
 - 100mg pTeroPure / day
 - 250mg pTeroPure / day
 - 100mg pTeroPure + 200mg grape extract / day
- Anticipate completion in late 2011, data published in early 2012







pTere Pure is poised to enter the Food & Beverage markets after achieving GRAS status

Announced GRAS (Generally-Recognized As Safe) status in early June

- GRAS self-affirmation complete¹
- Seeking letter-of-no-objection from FDA
- Filing of dossier to FDA 3Q 2011
- FDA response expected mid-2012

1 Industry experts from the American Institute for Biosocial and Medical Research, including former USDA and FDA senior staff members, unanimously agreed that pTeroPure merits this designation





pTer Pure is pursuing qualified health claim status with the FDA to strengthen its market penetration

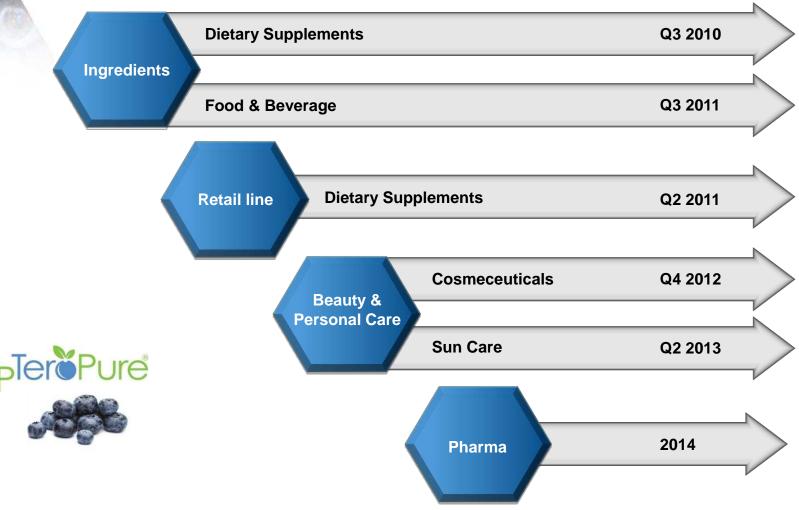
Qualified Health Claim

- Allows products containing pleropure to make claims such as "lowers cholesterol"
- ChromaDex has an exclusive license to a patent pending on cholesterol-lowering effects
- FDA dossier being prepared by Burdock Group and will be supported by clinical trials underway
- Designation expected by middle 2013





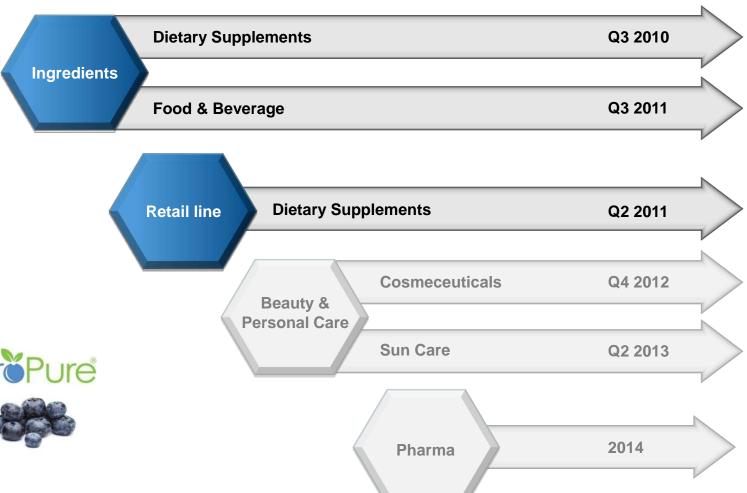
pTeroPure has significant potential across several market channels







pTeroPure is first being brought to the dietary supplements and food & beverage markets









- Food & Beverage





pTerePure is at the intersection of two large and growing markets. . . .

Functional Foods and Beverages

• 2010 Industry Sales: \$38.3B

• 2005 - 2010 Sales CAGR: 8.0%









• 2010 Industry Sales: \$28.4B

• 2005 – 2010 Sales CAGR: 7.4%

















Promising Ingredient of the Year"



"An ingredient with proven efficacy and safety that addresses the **needs of multi-populations** is bound to be successful a **sustainable production process** and apt promotional, **market positioning and penetration initiatives** are likely to further bolster the ingredient's potential and future **market acceptance.**"

- Frost & Sullivan, on the opportunity for pleropure





Since being introduced in September 2010, pTer Pure has shown adoption by key players in the supplements market

Key customers to date and their respective size

Internet Direct





Thorne









\$0.5 - 1.0

Company size (\$M revenue)¹

Company

Pterostilbene

Douglas Labs

\$290 \$20-50

Swanson

\$60

Life Extension

\$120

Nutraceutical Genceutics Int'l

Retail

\$140

Six additional companies are now incorporating pTeroPure into product offerings



¹ Nutrition Business Journal, internal estimates



of the world's largest private label beverage company in the world



- On June 28th 2011, ChromaDex announced it entered into a licensing and supply agreement with Cott Beverages, Inc. for the joint development of a clinically-backed, proprietary ingredient blend containing pleropure. The blend is initially targeted at the nutraceutical market but also expected to serve the food & beverage and cosmetic markets.
- Cott is the world's largest private label beverage manufacturer and has distribution strength at major clubs and wholesalers – Costco, Walmart, Sam's, and BJ's

"This agreement provides Cott access to ChromaDex's pTeroPure® platform and establishes a relationship with a science-based leader in the nutraceutical industry. We are excited to partner with ChromaDex, a name synonymous with both quality and science, and license its technology as part of our commitment to offering novel, best-in-class ingredients to our customers."

Doug Lynch, VP Business Development of the Star PhytoNutrients division of Cott Beverages, Inc. June 28, 2011





Examples of success in the ingredients space

<u>Company</u>	<u>Product</u>	<u>GRAS</u>	Qualified Health Claim	Estimated Revenue (\$M)	Estimated <u>Market Size(\$M) ¹</u>
Cargill	Corowise (phytosterols)	Yes	Yes	30 ¹	180
MARTEK O Iffe enriched (Sold to DSM for \$1.1B in 2011)	life's DHA (omega-3)	Yes	Yes	150 ²	1650

Translates to a **\$30-\$150M opportunity** for ChromaDex, but with potential for higher market capture due to:

- First-mover advantage in capturing a market for pterostilbene
- Intellectual property on health benefits
- Clinical studies tied exclusively to pTeroPure
- High awareness of blueberry health benefits in the marketplace



¹ Frost & Sullivan (Corowise U.S. sales of dietary supplement and food & beverage ingredient; U.S. market sizing)

² Global sales annualized from DSM Q1 2011 earning report (minus \$20M internal estimate for Martek retail brand)









pTeroPure is the foundation for ChromaDex's retail supplement line



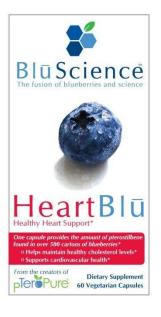
BlūScience¹⁰⁰ is the fusion of blueberries and science . . . an extraordinary combination made possible by pterostilbene (pTeroPure¹⁰⁰), a compound found naturally in blueberries. BlūScience¹⁰⁰ has created a line of products that combines the powerful effects of this protective agent with other ingredients that have potent health benefits. BlūScience¹⁰⁰ is committed to providing the most beneficial and highest quality formulations specially designed to support optimum health.*

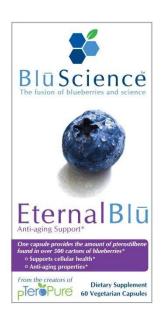


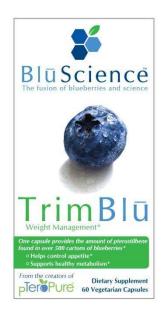
Proud Sponsor of the 2011 GNC Franchise Convention

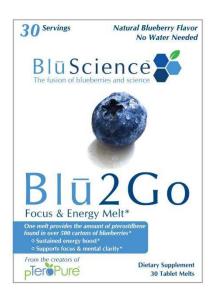












GNC launch: Q3 2011 (2600 corporate stores, up to 2200 franchisees worldwide)

"We are extremely excited about the BluScience launch with GNC, given the innovative and novel ingredient pTeroPure which is the foundation for their product line. The products will be rolled out to all corporate stores beginning in July as an addition to the GNC commitment to health."

-Ted Deitrick, VP Merchandising, GNC





Blū Science is now targeting mass market retailers following the GNC launch









420 U.S. locations



Over 3600 U.S. locations





Blū Science is developing key partners to support the launch into mass market



2010 Advertising Agency of the Year

















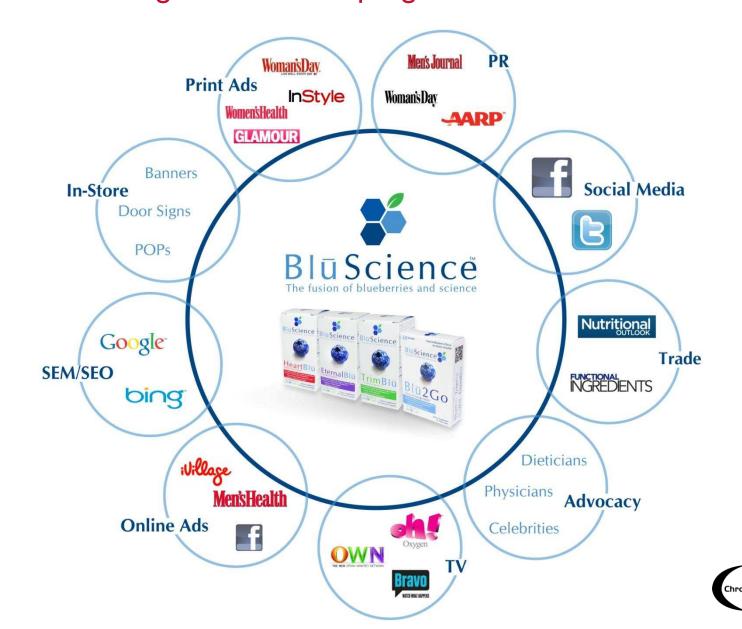








Blū Science will be supported by an aggressive advertising and PR campaign





Examples of retail brand success in the dietary supplement market

<u>Category</u>	<u>Product</u>	Estimated <u>Revenue (\$M)¹</u>	BluScience equivalent
Heart Health	Nature's Bounty Fish Oil	40	HeartBlu
Anti-aging	Amerifit DHEA	20 ²	EternalBlu
Weight control	Alli	105 ²	TrimBlu
Energy	Stacker Energy	40	Blu2Go

Potential opportunity of \$205M for ChromaDex

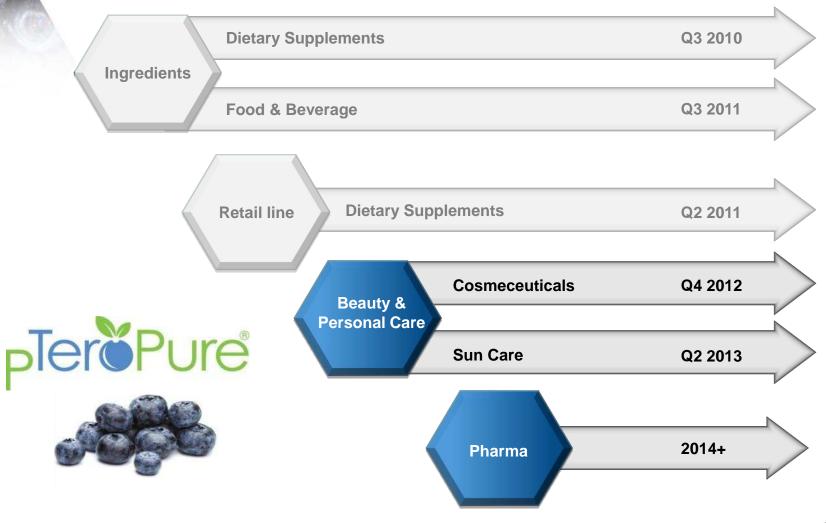


¹ Frost & Sullivan (U.S. market)

² Retail revenues



Personal Care and Pharmaceutical markets







pTer Pure has significant potential as a cosmeceutical due to its topical effects

Science Overview

- Research demonstrates the ability to inhibit skin damage & aging effects caused by oxidative stress
- Promotes skin tone lightening by inhibiting melanogenesis (darkening of skin)
- Lipophilic structure makes it potentially synergistic with common topical ingredients that effectively cross the skin barrier

Examples of success in this channel¹:

- DSM **\$2M** in retinol ingredient sales (market size of \$13M)
- Anti-aging cosmeceutical retail brands:
 - Dr. Brandt \$13M²
 - Strivectin \$28M²

Potential opportunity of \$15-\$30M for ChromaDex



¹ Frost & Sullivan (U.S. market)

² Retail revenues



Overview of the joint patent filed by U.C. Irvine and ChromaDex related to prevention of non-melanoma skin cancer

- Patent filed jointly between ChromaDex and U.C. Irvine
- Exposure to UV light activates enzymes (COX-2 and 12-LOX) that damage cellular structure while also inactivating proteins (15-PDGH and UGT) that inhibit this process
 - The long term build-up of damage related to these pathways leads to skin cancer
 - Pterostilbene has been shown to both re-activate UGT and inhibit COX-2 to prevent the progression of cancer

The key claim of the joint patent is using pterostilbene to increase UGT activity for the **treatment** and **prevention of skin cancer**





Science overview for ptere related to prevention of non-melanoma skin cancer

Frank Meyskens, MD

Director of the Chao Family Comprehensive Cancer Center University of California Irvine

Video - 1:22

http://investors.chromadex.com/phoenix.zhtml?c=212121&p=irol-investorKit





This translates into a major opportunity for pteroPure in sun care, particularly in the prevention of non-melanoma skin cancer

Commercial opportunity

- Rising NMSC incident rates and few industry players make the market especially attractive
 - Nearly 2 million people are diagnosed annually in the U.S. alone¹
- Current topical treatments contain frequent side-effects and have limited efficacy
- The non-melanoma skin cancer (NMSC) market is estimated to exceed \$450M¹ but is **significantly underserved**; the U.S. sunscreen market is estimated at \$800M²

Example of success in the sunscreen market:

Neutrogena's *Helioplex* line: \$65M² annually in the U.S.



¹ Archives of Dermatology 2010

² Frost & Sullivan, retail revenue









With a clinical study underway, pTerePure has significant potential as a pharmaceutical

Commercial opportunity

- University of Mississippi study will be the 1st in a series of clinical studies on pathway to pharmaceutical approval
 - Its effects on lipid and blood sugar levels may be superior to fibrates and provide efficacy without the side effects of statins
- Oxidative stress (neuroprotectant), anti-anxiolytic, and non-melanoma skin cancer will also be opportunity areas

Example of success in this market:

- Lovaza \$150M¹ in its first full year ('06)
 - Pharmaceutical-grade fish oil for heart health
 - Now selling over \$1B² globally



² Nutrition Business Journal





Pipeline of additional Proprietary Products





ChromaDex has numerous other proprietary products yet to be marketed

Compound	Potential Applications			
Anthocyanins (C-3-G)	Weight-lossDiabetes	Food pigmentationSolar panel efficiency		
Nicotinamide Riboside	Potential replacement to Niacin (Vit B3) in energy products & pharmaceuticals	Show promise in obesity treatments		
Other stilbenoids (e.g., Piceatannol, Trimethoxy)	Lipid reductionOxidative-stress reduction	Cognitive enhancement		
Curcumin	Anti-inflammatoryLipid reduction	Immune healthMental acuity		

ChromaDex continues to broaden its IP portfolio





Anthocyanins: ChromaDex's next proprietary product with potential in multiple markets

First mover advantage

- Botanically-derived compounds represent the next 'super fruit' class of phytochemical ingredients (natural pigments in purple-colored fruits)
- License of process patents obtained from SUNY Buffalo, June 2008
- Anthopure Technology



- SBIR P1 Grant for production validation, June 2009
- SBIR P2 Grant for same, January 2011
- Commercial scale up underway

Anthocyanins will be brought to market by replicating the pTeroPure strategy





Nicotinamide Riboside: another ChromaDex product in the pipeline

- Potential new vitamin to replace Niacin (Vitamin B3)
- Nicotinamide Riboside is a compound that enhances efficiency of the body's energy production (through more efficient ATP production)
- Supports caloric restriction
- ChromaDex has licensed a commercial-scale manufacturing patent from Cornell University
- Expect commercialization, initially through the nutraceutical channel, by Q4 2012

Cornell University





Summary



In review pTeroPure has blockbuster potential across multiple markets



Ingredients

\$30 - \$150M

Retail line \$205M

Success across all markets could lead to a \$465 - \$600M opportunity for plere Pure

Beauty & Personal Care

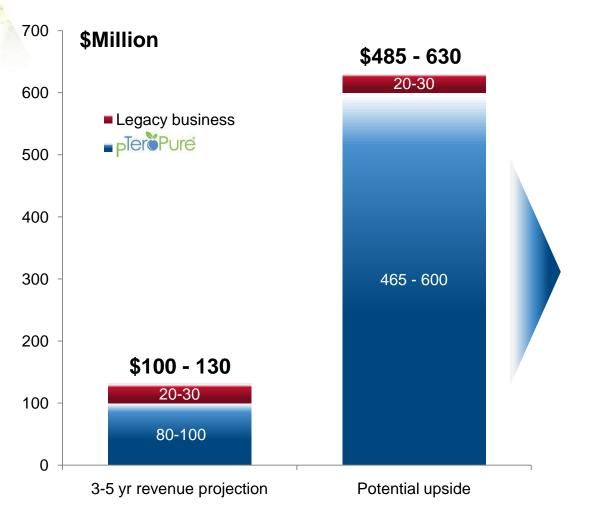
\$80 - 95M







ChromaDex has focused 3-5 year plans and a huge potential upside



The total market opportunity for Pier Pure greatly exceeds internal plan expectations





Key milestones for ChromaDex

	Launch Pier as a supplement ingredient	\checkmark	Sep '10
	Achieve GRAS Status	\checkmark	May '11
	Launch Blū Science at GNC	\checkmark	Jul '11
	Launch Peregoias a food & beverage ingredient		Aug '11
	Launch BlūScience into additional mass market retailers		Q1 '12
()	Announce human clinical trial results at Univ. of Mississippi		Q1 '12
	Launch pleropure and Cott berry extract blend into major clubs and wholesalers		Q1 '12
	Initiate non-melanoma skin cancer study with UC Irvine		Q2 '12
	Receive GRAS letter-of-no-objection from FDA		Mid '12
0	Receive qualified health claim for Pure		Mid '13
()	Continue IP in-licensing for additional proprietary compounds		Ongoing





- ChromaDex's legacy business is positioned for growth and provides sourcing for proprietary products
- plere Pure, ChromaDex's first proprietary ingredient to market, has tremendous growth opportunity across multiple markets
- ChromaDex's growing IP related to other proprietary products provides for long-term revenue growth across a similar array of key markets





Contact Information

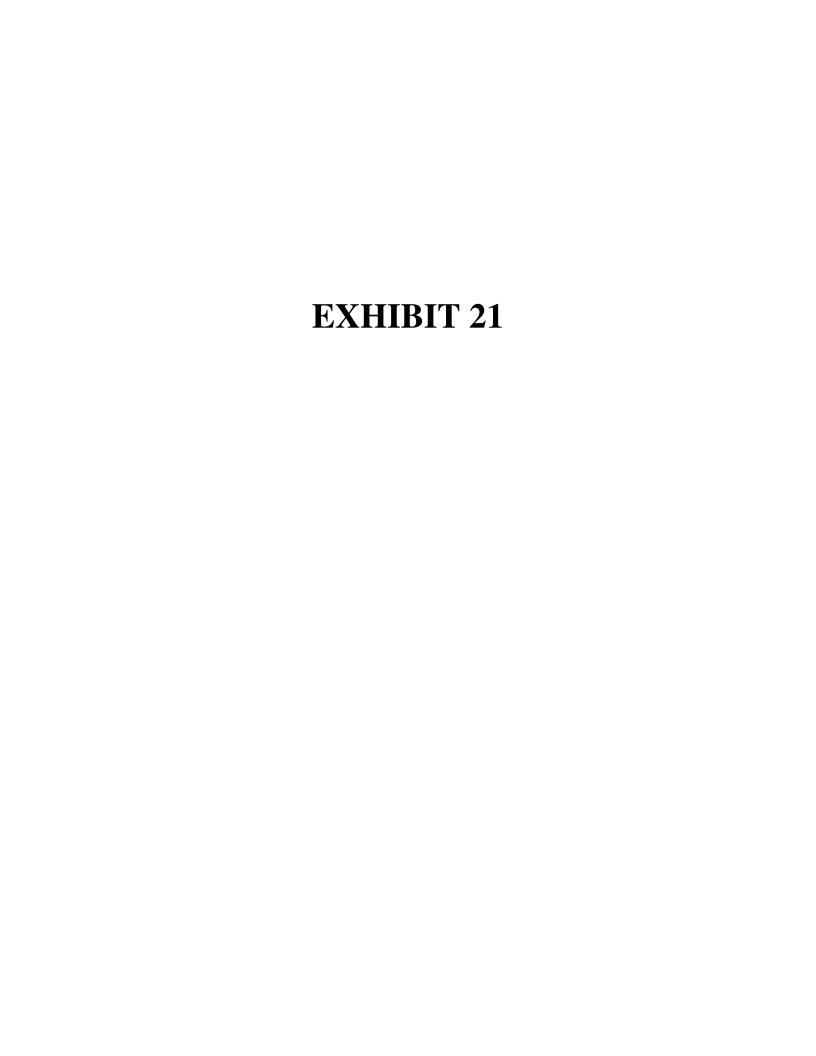
ChromaDex, Inc. 10005 Muirlands Blvd., Suite G Irvine, CA 92618

Phone: +1-949-419-0288

Fax: +1-949-419-0294

www.chromadex.com





Pterostilbene Supreme

DESCRIPTION

Pterostilbene Supreme, by Douglas Laboratories, provides pterostilbene, a methylated resveratrol that is naturally occurring in berries. This formula also contains resveratrol, curcumin and vitamin D3 which can function synergistically with ptersostilbene to support healthy aging.

FUNCTIONS

Pterostilbene, a methylated form of resveratrol is considered the *next generation of resveratrol*. Pterostilbene has advantages over resveratrol: superior biological activity, better oral bioavailability, and slower metabolism in the body.

pTeroPureTM pterostilbene is a nature identical form of trans-pterostilbene, a stilbene found in certain berries. The enhanced activity of pterostilbene compared to resveratrol may, in part, be explained by structural differences. Pterostilbene with two methoxy groups and one hydroxyl group has greater lipophilicity and a higher potential for cellular uptake than resveratrol, which has three hydroxyl groups. Pterostilbene showed strong inhibitory activity, much more than resveratrol, against a particular form of cytochrome P450.

Researchers have suggested that these two compounds also work synergistically, supporting the theory that a combination of pterostilbene and resveratrol in a formulation may be more effective than using these ingredients separately. Both pterostilbene and resveratrol support mitochondrial function and healthy aging by activating SIRT1, one of the key enzymes of the sirtuin family. Sirtuins, a class of proteins, have been implicated in influencing aging and regulating transcription, apoptosis and stress resistance, as well as energy efficiency and alertness during low-calorie

situations. † Pterostilbene also supports cardiovascular health: results from in vitro studies showed that pterostilbene acts as a PPARR agonist and may be a more effective PPARR agonist and hypolipidemic agent than resveratrol. In vivo studies demonstrate that pterostilbene possesses lipid and glucose lowering effects. Pterostilbene Supreme also contains ResvidaTM, a pure resveratrol clinically studied for its safety. ResvidaTM resveratrol is unique as it is not a plant extract and is not derived from plant sources, therefore presents no risk for contamination with pesticides and other potentially unwanted compounds. Studies indicate resveratrol may be supportive in maintaining the normal aging process by helping to prevent free radical damage that can lead to premature aging of cells.

Studies have shown that curcumin, a naturally occurring group of compounds from turmeric, function as powerful antioxidants and can help support neurological and cardiovascular function. Since curcumin exhibits poor oral absorption in the body, Douglas Labs has chosen a highly bioavailable curcumin called MERIVA®. Pharmacokinetic comparison studies have shown MERIVA® to have up to a 20-fold improvement in bioavailability versus the standard 95% turmeric extracts due to proprietary PHYTOSOME technology which increases hydrolytic stability.

Vitamin D, curcumin and resveratrol/pterostilbene share many common targets and points of overlap in gene regulation, signal transduction and therapeutic effects. The nature of this overlap suggests synergy upon combination, potentially leading to an influence on inflammatory and cardio-protective pathways.

Japanese wasabi with a specially standardized broccoli sprout concentrate and organic

pomegranate extract are added to this formula to support the body's natural antioxidant and detoxification processes. [†] Sulforaphane, an ITC found in broccoli, has been found to significantly increase the activity of detoxification enzymes (cytochrome P450).

INDICATIONS

Pterostilbene Supreme may be a useful supplement for individuals wishing to consume a powerful combination of antioxidants and vitamin D for cardiovascular health or longevity support.

FORMULA (#200901)

1 Vegetarian Capsule Contains:

Vitamin D-3'	.1000
IU	
MERIVA® Curcumin Phytosome	.250 mg
(Curcuma longa extract,	
rhizome)/Phosphatidycholine (soy) complex)	
Resveratrol (as trans-resveratrol)	100 mg
Pterostilbene (pTeroPure')	50 mg
Proprietary Cruciferous	150 mg
Vegetable and Fruit Blend:	

Wasabia japonica (rhizome, providing 600 mcg total glucosinolates), Broccoli powder (sprout) (BroccoPhane') (standardized to contain 200 mcg of sulforaphane) and Organic Pomegranate powder (fruit).

Other ingredients: Cellulose (capsule), calcium citrate, microcrystalline cellulose, vegetable stearate, silica and titanium dioxide.







SUGGESTED USE

Adults take 1 capsule daily with meals or as directed by your healthcare professional.

SIDE EFFECTS

No adverse side effects reported.

STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

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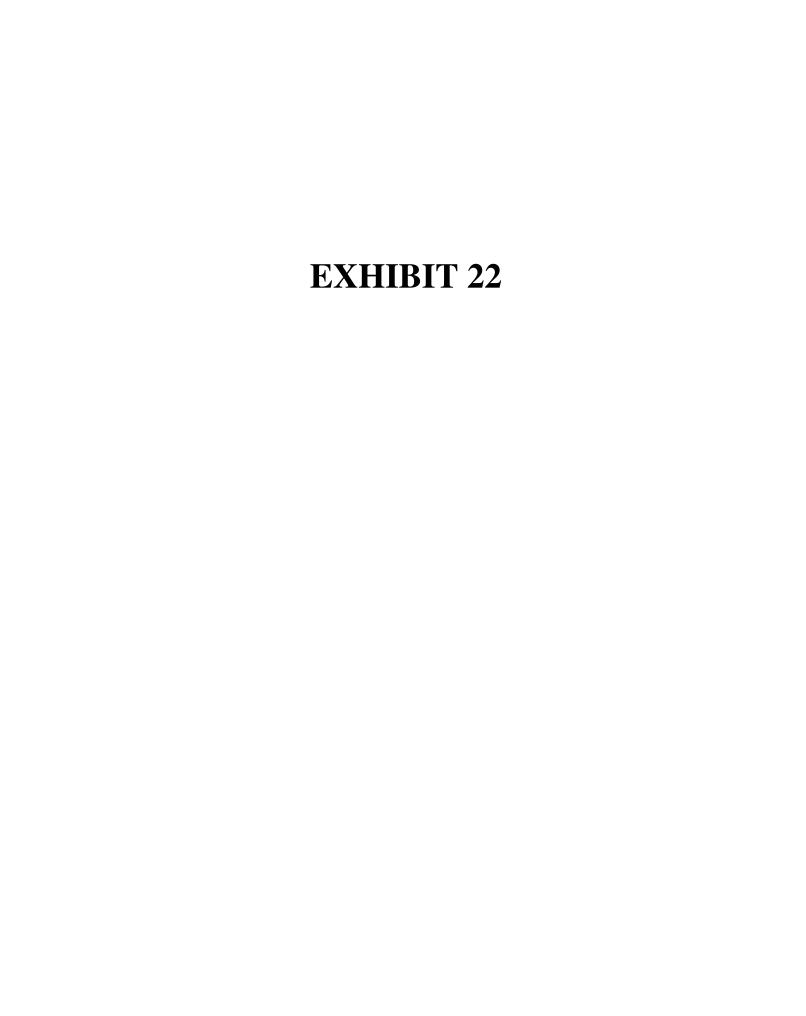
vitamin D receptor with implications for colon cancer chemoprevention. J Nutr Biochem. 2010 Dec; 21(12):1153-61. Epub 2010 Feb 12.

[†]These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Manufactured by Douglas Laboratories 600 Boyce Road Pittsburgh, PA 15205 800-245-4440 You trust Douglas Laboratories. Your patients trust you.



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The **Next** Generation Resveratrol™



- Pterostilbene's lipophilic structure gives it a biological advantage over resveratrol with a higher oral bioavailability and longer half-life in the body
- Pterostilbene is a natural analog of resveratrol found in blueberries and other small berries
- pTeroPure[™] is nature identical and pure (>99%) all trans-pterostilbene with three patents pending



Brought to you by:



A premier provider of unique, innovative, and novel phytochemical ingredients. For samples or further technical information, please contact us:

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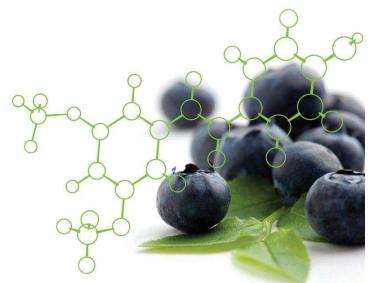
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EXHIBIT 23

pTeroPure Pterostilbene: The Next Generation Resveratrol

Jeremy Bartos, PhD

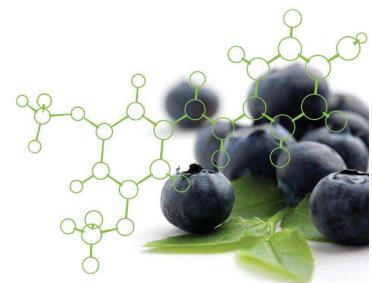
pTeroPure Ingredients Product Manager



Pterostilbene and Nutraceuticals: More than Just a Resveratrol Replacement

Potential markets for products containing Pterostilbene

- Anti-Aging
- Anti-Oxidant/Oxidative Stress
- Memory Improvement/Cognitive Enhancement
- Anti-Inflammatory
- Heart health
 - Cholesterol
 - Blood Pressure
 - Atherosclerosis
- Blood sugar control



What is Pterostilbene?

Methylated resveratrol

resveratrol

 Naturally found in small berries (blueberries, huckleberries, grapes, etc.)

• Phytoalexin (plant defense system); anti-fungal, anti-microbial

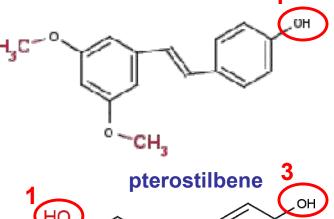


Pterostilbene vs. Resveratrol,

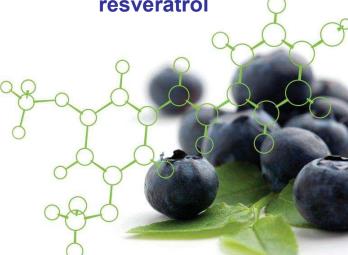
Pterostilbene is:

- More lipophilic than resveratrol
 - higher potential for cellular uptake
- More bio-available than resveratrol
 - greatly improved oral adsorption
 - greater metabolic stability
- Longer half-life in the body than resveratrol
 - resveratrol: ~14 minutes in blood (Asensi et al, Free Radic Biol Med, 33, 387, 2002)
 - pterostilbene: ~ 105 minutes in blood

(Remsberg et al, Phytother. Res. 22, 169, 2008)







Pterostilbene and Resveratrol Synergism

R Mikstacka, et al.; Plant Foods Hum Nutr. 65, 57 (2010)

Table 1 Combination index for LPO inhibition in human erythrocytes by mixtures of quercetin, *trans*-resveratrol and pterostilbene

Total concentration [μM] ^a	Combination index ^b					
	Quercetin + resveratrol	Quercetin + pterostilbene	Resveratrol + pterostilbene			
2.5	0.57±0.15°	2.86±0,50 X	0.45±0.10°			
5	0.65±0.21°	0.90 ± 0.11	0.46 ± 0.18^{e}			
10	0.90 ± 0.46	1.27±0.30	$0.65 \pm 0.11^{\circ}$			
20	1.06 ± 0.37	1.43 ± 0.40	0.53 ± 0.12^{c}			
40	0.95 ± 0.59	1.70 ± 0.67	$0.82 \pm 0.13^{\circ}$			
60	0.80 ± 0.16	1.66 ± 0.41	$0.89 \pm 0.06^{\circ}$			
80	1.04 ± 0.23	1.75 ± 0.61	1.18 ± 0.06			
100	1.29 ± 0.24	1.41 ± 0.56	1.47 ± 0.02			

a Molar ratio of polyphenols 1:1

LPO = H_2O_2 -induced lipid peroxidation

Conclusion: Pterostilbene and resveratrol act synergistically in protecting human erythrocytes from damage due to oxidative stress.

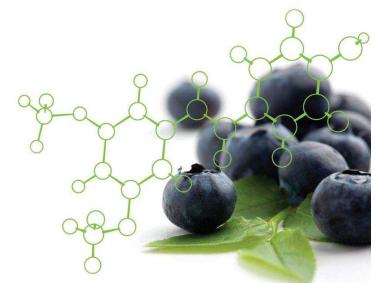


^bMean values of three independent experiments performed with different blood sample±SEM

c CI<1; synergistic effect

Pterostilbene and Your Health

- Cholesterol
- Diabetes
- Anti-Oxidant/Oxidative Stress (aging)
- Cognitive Decline
- Cancer



Pterostilbene and Cholesterol

PPARα: involved in fatty acid and lipid catabolism; activation leads to decreased triglyceride and very low density lipoprotein (VLDL) synthesis

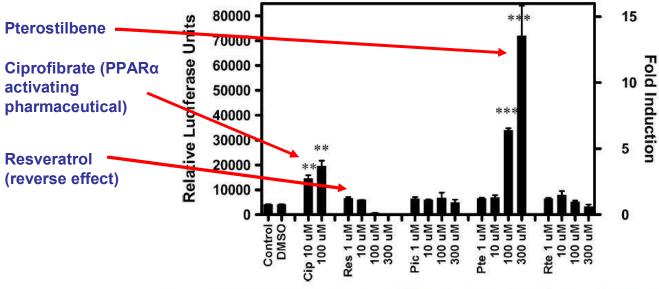


Figure 2. Effect of stilbenes on PPAR α in H4IIEC3 cells transfected with PPRE-AB LUC reporter gene plasmid. Cip, ciprofibrate; Res, resveratrol; Pic, piceatannol; Pte, pterostilbene; and Rte, resveratrol trimethyl ether.

A.M. Rimando, et al.; J. Agric. Food Chem. 53, 3403 (2005)

Conclusion: pterostilbene activates PPARα, which lowers the bad LDL, even better than ciprofibrate, and is the only stilbene tested to do so.

Pterostilbene and Cholesterol

	<u>Control</u> <u>Pterostilbene</u>						
Plasma Lipoprotein Cholesterol (mg/dL) ^b							
VLDL	99.3 ± 15.3	82.7 ± 15.7 (17% ↓)					
LDL	320.9 ± 4.9	228.1 ± 4.2 ^c (29% ↓)					
HDL	127.4 ± 1.1	137.0 ± 2.1 (7% ↑)					
Total	547.6 ± 6.7	$447.8 \pm 5.6^{\circ}$ (18% \downarrow)					
LDL/HDL ratio	2.6 ± 0.37	$1.8 \pm 0.39^{\circ} (31\% \downarrow)$					
Plasma glucose (mg/dL)	216.5 ± 10.1	185.1 ± 8.7 (14% ↓)					
Animals per group	10	8					



Data from A.M. Rimando, et al.; J. Agric. Food Chem. 53, 3403 (2005)

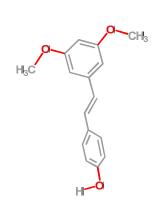
Conclusion: pterostilbene raises the good HDL cholesterol and significantly lowers the bad LDL cholesterol

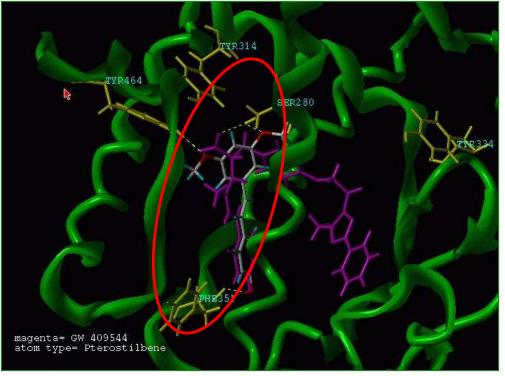


^aBased on a single dose of 25 mg/kg/day of diet for 21 days; pterostilbene intake is ~2.5 mg/kg BW.

^bValues are the mean ± SEM. ^cSignificance at the P = 0.05 level.

Docking of Pterostilbene in the PPARα Ligand-Binding Domain





Binding pose of pterostilbene inside PPARα ligand binding domain, superimposed on the co-crystal structure of GW409544 (magenta).

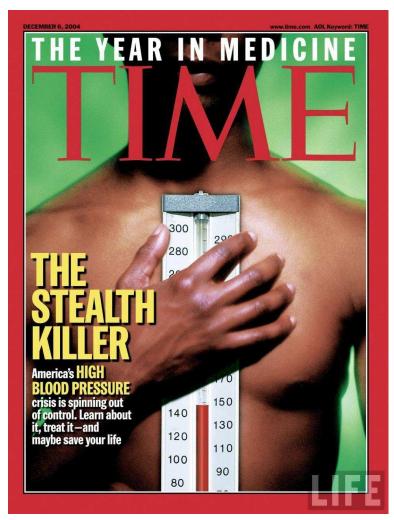
Mizuno et al., Bioorg. Med. Chem. 16:3800-3808, (2008)

Conclusion: Pterostilbene is an excellent fit in the hydrophobic binding cavity and overlaps that of GW409544, and has H-bond interactions with the Tyr464, Ser280, and Phe351 that are involved in PPARα activation.

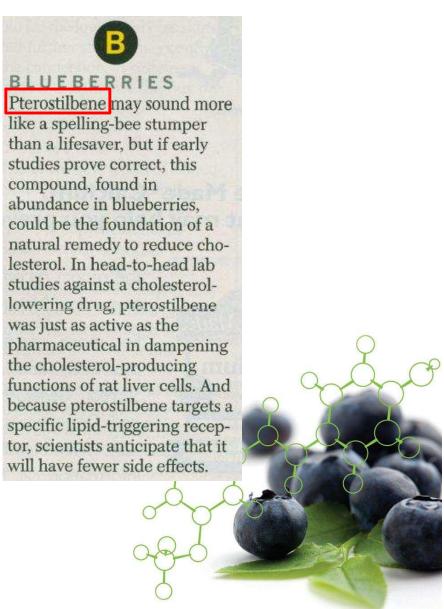
Pterostilbene PPARa Summary

- Among the stilbenes tested, <u>only</u> pterostilbene was a stimulant of PPAR α activity in hepatic cells *in vitro*.
- Plasma lipoprotein cholesterol and glucose lowering effects of pterostilbene in hypercholesterolemic hamsters are consistent with the *in vivo* lipid lowering actions previously reported for PPAR α agonists (e.g., fenofibrate).
- Pterostilbene had an excellent structural alignment for H-bond interactions with three key L-amino acids of the ligand binding domain involved in PPAR α activation.
- Pterostilbene is a unique <u>natural product</u> template as an PPARα agonist.
- Pterostilbene could be a possible <u>alternative to fibrates</u> in the treatment of human cardiovascular-related diseases (dyslipidemias and atherosclerosis).

Pterostilbene in the news



Time, December 6, 2004



Pterostilbene in the news



our favorite foods aren't just goodthey're good for us.

The Year's Best

ent," may hold more promise than our Rehe eased by eating more of the foods you'w always enjoyed.

True Blue Benefits

Blueberriesgood source of antioxi-

down cholesterol and fax, as studies on rar cells at the U.S. Department of Agricul rare's laboratories in Oxford nound on the betries may prove to be a potent weapon in the battle

Eat More (Soup), Weigh Less

A little soup before meals may be just what the weight-loss doctor ordered. In a recent study at Penn Stare, diesers who are broth-based soups twice a day lost more weight and kept it off longer than those who went soupless or are snack

PAGE 24 + MINTHANTE | 4. 1004 + PARADE

fisuals instead. Because supplied mostly water, a bowl before meals helps us feel full on fewer calonies.

Drink To Your Health

Two so four copy of coffee a day may lower the risk of liver disease, cancer, clogged preenen. Parkinson's disease, Alabeimer's and diabetes, according to a report presented recently at the New York Academy of Sciences Coffee experts say that each cup is actually a complet in xrure of active compounds including healthful armoniants

Drizzie The Fatty Dressing

Salad lovers, don't limit yourself to flat-five dressing! A recent study at lows State indicates that significently more carotenoids-those healthy conspounds found in fruits and vegetables-are absorbed by the trody when a reduced far dress ing is used. When salad is enjoyed with a full-fat dressing, the health bined to may be even greater.

More Milk, Less Midriff?

More always said that milk builds strong bones and is a good source of viramins, but did she know that drinking 24 ounces a day of low-far or for-free milk also may help you manage your weight? Berter skill, new research out of the University of Tennesses suggests that milk specifically enggers fat loss feep made the storrach.

Breakfast Just Got Healthier

This fall, leading detail comparues gave their product lines a nutrisional massesver. The revamped

orestrated :: or holo sugeryet at all protride the some

PARADE + NOVEMBER 14, THOU + PAGE 30.

Parade, November 14, 2004

True Blue Benefits Blueberries-a

good source of antioxidantsalso may help break

down cholesterol

and fat, as studies on rat cells at the U.S. Department of Agriculture's laboratories in Oxford,

Miss., found. Pterostilbene, a compound in the berries, may prove to

be a potent weapon in the battle

against heart disease.



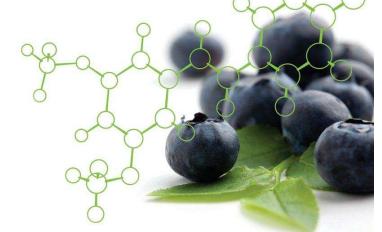
Pterostilbene and Diabetes

Table 1 Changes in the levels of glucose in normal and experimental rats for 2, 4 and 6 weeks

Groups	Glucose (mg/dl)			
	Day 0	6th week		
Normal control	72.51±6.96 -	→74.50±6.30°		
Normal+Pterostilbene (40 mg/kg)	80.48 ± 7.06	67.48 ± 6.67^{a}		
Diabetic control	310.24±27.07	\longrightarrow 394.19±32.67 ^b		
Diabetic + Pterostilbene (10 mg/kg)	292.21 ± 24.95	$186.80 \pm 15.66^{\circ}$		
Diabetic +Pterostilbene (20 mg/kg)	282.68 ± 24.24	165.16 ± 13.76^{d}		
Diabetic +Pterostilbene (40 mg/kg)	279.58±23.66-	→ 121.50±10.84 ^e		
Diabetic+Metformin (500 mg/kg)	288.49 ± 24.52 -	\rightarrow 140.89 ± 12.09 ^f		

L. Pari & M.A. Satheesh; Life Sci. 79, 641 (2006)

<u>Conclusion</u>: pterostilbene lowers blood glucose levels in diabetic rats <u>better</u> than pharmaceutical drug Metformin and at a much <u>lower dose</u>



Pterostilbene and Diabetes

Table 2 Changes in the levels of insulin in normal and experimental rats

Groups	Insulin (µU/ml)
Normal control	(16.73 ± 1.41^a)
Normal + Pterostilbene (40 mg/kg)	17.54±1.53 ^a
Diabetic control	6.40 ± 0.56^{b}
Diabetic + Pterostilbene (40 mg/kg)	$14.54 \pm 1.53^{\circ}$
Diabetic + Metformin (500 mg/kg)	$11.48 \pm 0.56^{\circ}$

L. Pari & M.A. Satheesh; Life Sci. 79, 641 (2006)

Conclusion: pterostilbene raises insulin levels in diabetic rats, better than pharmaceutical drug Metforminand at a lower dose.



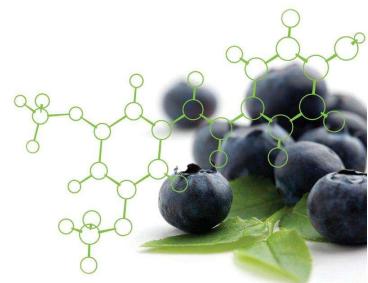
Pterostilbene and Anti-Aging

Anti-Inflammatory

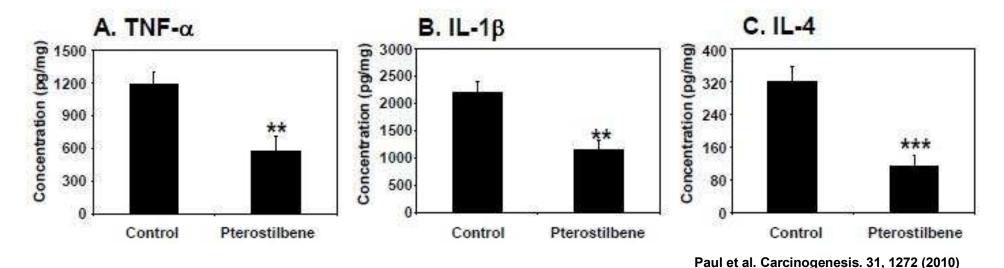
Anti-Oxidant/Oxidative Stress

Memory Improvement

Anti-Cancer



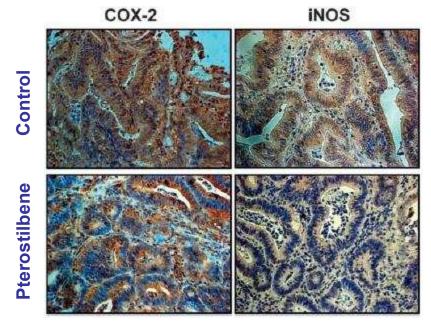
Pterostilbene and Anti-Inflammation



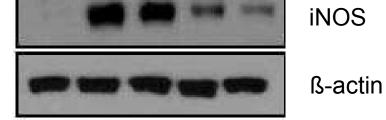
The mucosa samples were randomly selected from each group, homogenized and assayed by ELISA for the different cytokines. n = 12 in control group; n = 6 in pterostilbene group **p<0.01, ***p<0.005.

Conclusion: Pterostilbene lowered the production of inflammatory cytokines TNF- α , IL-1 β and IL-4 in the colonic mucosa of rats and thus acts as an anti-inflammatory.

Pterostilbene and Anti-Inflammation



The colon tumor sections were incubated with the respective antibodies. Representative sections are shown. Control cells (no pterostilbene) had heavier brown staining. Paul et al. Carcinogenesis. 31, 1272 (2010) Treatment (15 hr)



 1.0
 30.2
 26.9
 11.9
 7.1
 iNOS

 1.0
 1.1
 1.1
 1.1
 1.1

- - 14.1 61.0 77.3

% Inhibition

Suh et al., Clin. Cancer Res, 13, 350 (2007)

Conclusion: Pterostilbene was shown to reduce both iNOS and COX-2 expression in colon adenocarcinomas and dose-dependently inhibit iNOS expression in human colon cancer cells



Pterostilbene as an Anti-Oxidant

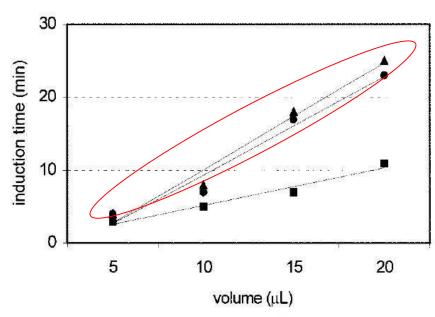


Table 1. Total Reactive Antioxidant Potential (TRAP) Expressed in μ M Trolox Equivalents

sample	TRAP (uM)		
Trolox	144 ± 16		
pterostilbene	237 ± 58		
resveratrol	253 ± 53		

Figure 3. Induction time (min) as a function of the concentration of Trolox (150 μ M initial concentration) (\blacksquare), pterostilbene (\bullet), and resveratrol (\blacktriangle) (150 μ M initial concentration).

A.M. Rimando, et al.; J. Agric. Food Chem. 50, 3453 (2002)

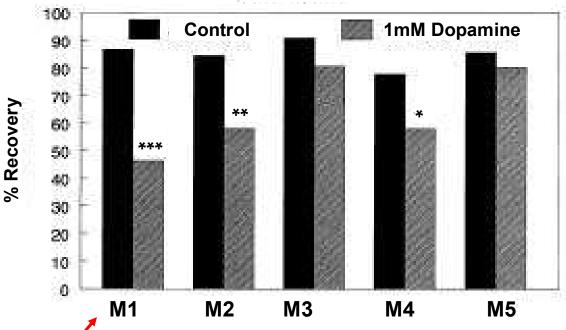
<u>Conclusion</u>: pterostilbene has the same anti-oxidant potential as resveratrol



Pterostilbene and Oxidative Stress

Measuring Oxidative Stress

RECOVERY



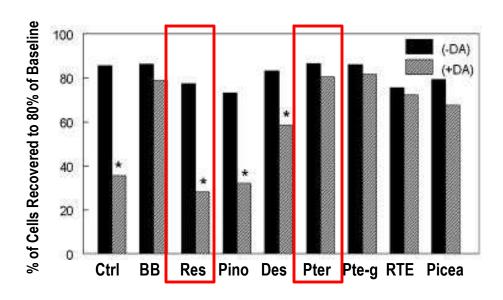
RECEPTOR

Percent of cells showing *Recovery* to oxotremorine induced Ca²⁺ influx; *p < .05, **p , .01, ***<.001.

Joseph et al. Free Rad. Biol. Med. 32:153-161, (2002)

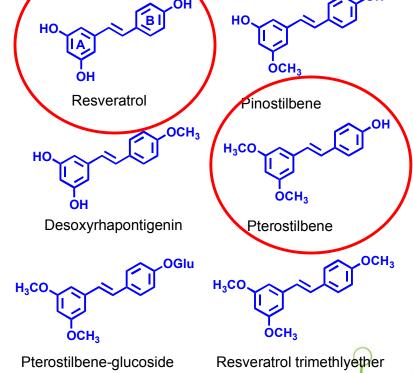
Conclusion: Muscarinic receptor subtype 1 was the most sensitive to oxidative stress.

Pterostilbene and Oxidative Stress



Mean Ca²⁺ recovery in M1-transfected COS-7 cells, control and treated with the stilbenes, following 0 (-DA) or 1 mM DA (+DA) treatment. *Difference in recovery between non-DA-treated and DA-treated cells for each treatment (p < 0.001).

Joseph et al., J. Agric. Food Chem. 56:10544-10551 (2008)

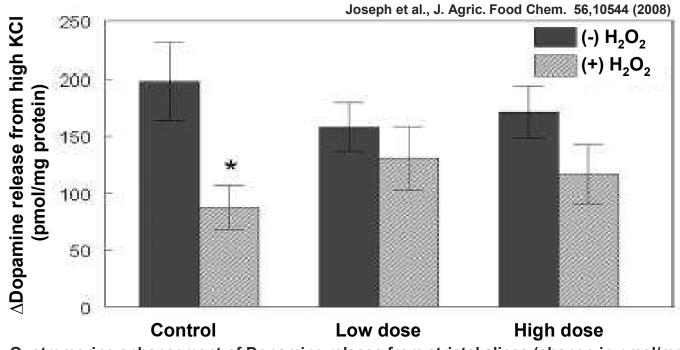


<u>Conclusion</u>: Pterostilbene protects against oxidative stress in COS-7 cell assay; Resveratrol <u>does not</u>



Piceatannol

Pterostilbene and Oxidative Stress

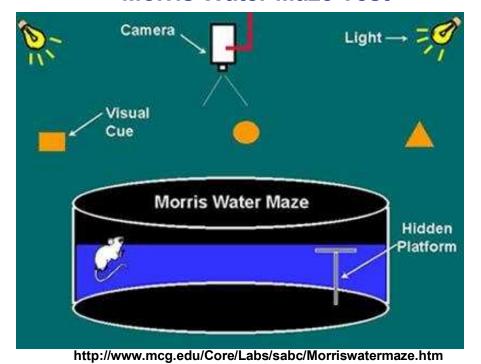


Oxotremorine enhancement of Dopamine release from striatal slices (change in pmol/mg protein, mean \pm SEM) under basal levels (-H₂0₂) and under conditions of OS (+H₂0₂); (*p < 0.01).

<u>Conclusion</u>: Pterostilbene protected against the decrease in dopamine release following oxidative stressor.

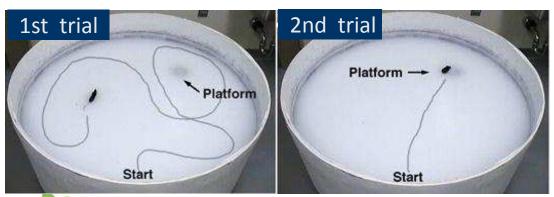


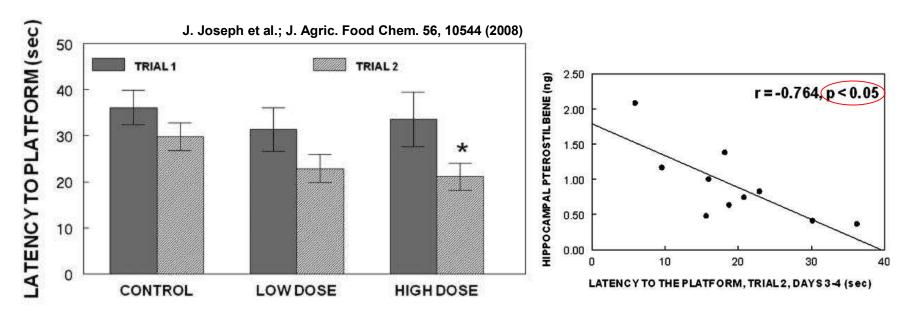
Morris Water Maze Test



Description: The Morris Water Maze test involves placing the rodent in a pool of water where it must use external visual cues to remember the location of a hidden platform just below the water's surface.

Purpose: The MWM test measures spatial learning and memory. This is one of the most popular tasks in behavioral neuroscience and is sensitive to both the amnestic and memory-enhancing effects of drugs.

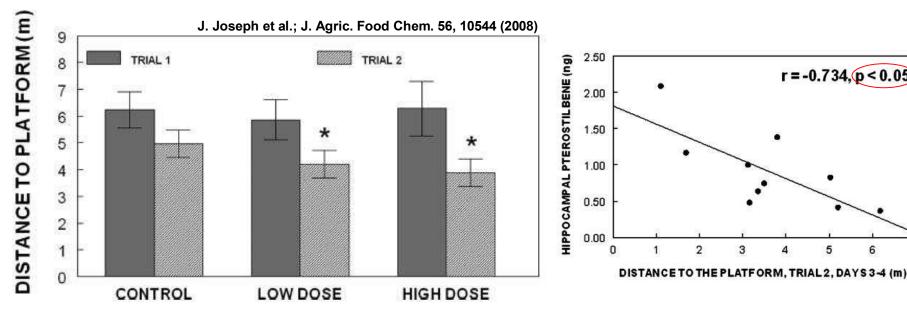




MWM performance assessed as latency to find the hidden platform.

*Indicates a significant difference between Trial 1 and Trial 2 performance for the high dose pterostilbene group (p < 0.05); *i.e.,* this group had improved working memory. Improvement was not seen in the control rats.

Conclusion: an increase in brain pterostilbene levels leads to a decrease in the amount of time to get to the platform between two trials (memory improvement)



MWM performance assessed as distance to find the hidden platform.

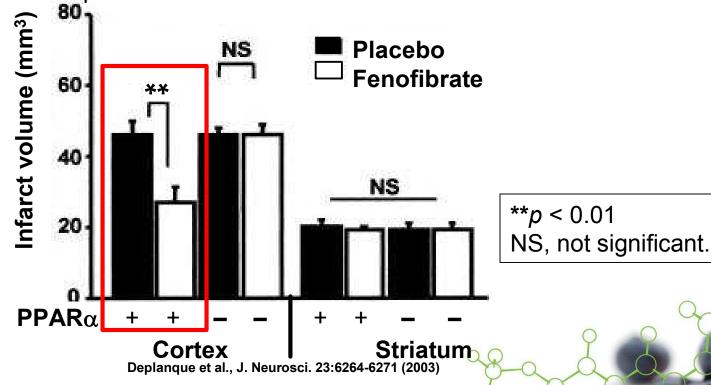
*Indicates a difference between Trial 1 and Trial 2 performance for the low and high dose pterostilbene groups (p < 0.05); *i.e.,* these groups had improved working memory. This improvement was not seen in the control rats.

Conclusion: an increase in brain pterostilbene levels leads to a decrease in the distance travelled between two trials (<u>memory improvement)</u>

r = -0.734, p < 0.05

More than just modulating metabolic pathways (as seen in cholesterol lowering), PPAR α is able to regulate oxidative as well as inflammatory pathways.

The neuroprotective effect of fenofibrate in SV129 mice.



Conclusion: The neuroprotective effect of fenofibrate was not seen in PPAR α -deficient mice, so fenofibrate induced neuroprotection via PPAR α activation in cortical areas of the brain (hippocampus). As a PPAR α agonist, pterostilbene should induce the same effect.

Pterostilbene and Anti-Aging Summary

- Of all stilbenes tested, pterostilbene demonstrated the best protection against oxidative stress in M1-transfected COS-7 cells.
- Pterostilbene reversed cognition decreases in old rats, likely due to protection from oxidative stress.

• Levels of pterostilbene in the hippocampus positively correlated with animal behavior and cognitive function.

• As a PPAR α agonist, pterostilbene may act like fenofibrate by activating PPAR α in the hippocampus, contributing to neuroprotection from oxidative stress.



Pterostilbene and Cancer

Pterostilbene has shown anti-cancer activity in several different solid tumors

Melanoma (inhibits metastasis)

Ferrer et al, Neoplasia 7, 37 (2005)

Colorectal Cancer (suppresses premalignant lesion formation and invasion)

N. Suh et al; Clin. Cancer Res. 13, 350 (2007); S. Paul et al; Carcinogenesis 31, 1272 (2010)

Gastric Carcinoma (induces cell cycle arrest and apoptosis)

M.H. Pan, et al.; J. Agric. Food Chem. 55, 7777 (2007)

Breast Cancer (inhibits metastasis and induces apoptosis)

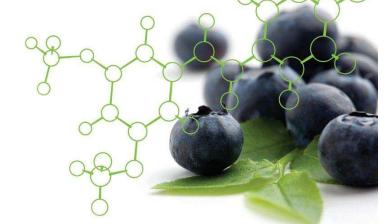
M. Pan et al; Evid. Based Complement Alternat. Med. 7, (2009)

Hepatocellular Carcinoma (inhibits metastasis)

M.H. Pan et al; Carcinogenesis. 30, 1234 (2009)

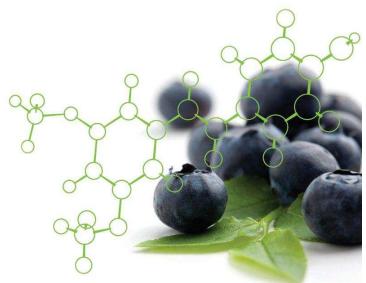
Lung Cancer (induces apoptosis)

J.G. Schneider et al.; J. Surg. Res. 161, 18 (2010)



Summary: The Diverse Biological Activities of Pterostilbene

- Analgesic
- Antioxidant
- Anti-diabetic
- Anti-inflammatory
- Cancer chemopreventive
- Cytotoxic
- Hypolipidemic
- Cognitive function improvement
- Anti-microbial



Pterostilbene Dosage

Human dose translation from animal studies is based on body surface area (BSA)

TABLE 1. Conversion of animal doses to HED based on BSA

Species	Weight (kg)	BSA (m ²)	K_m factor	
Human				
Adult	60	1.6	37	
Child	20	0.8	25	
Baboon	12	0.6	20	
Dog	10	0.5	20	
Monkey	3	0.24	12	
Rabbit	1.8	0.15	12	
Guinea pig	0.4	0.05	8	
Rat	0.15	0.025	8 6	
Hamster	0.08	0.02	5	
Mouse	0.02	0.007	3	

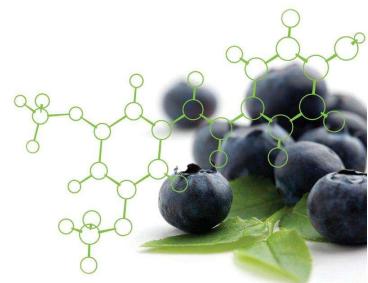
Values based on data from FDA Draft Guidelines (7). To convert dose in mg/kg to dose in mg/m², multiply by K_m value.

Reagan-Shaw et al.; FASEB J. 22(3):659-61 (2008)

HED = human equivalent dose

Formula for Dose Translation Based on BSA							
HED (mg/kg) = Animal dose (mg/kg) multiplic	Animal Km						
TIED (mg/kg) = Animai dose (mg/kg) mutupin	Human Km						

Figure 1. Formula for dose translation based on BSA.



Pterostilbene Dosage

Cholesterol paper (A.M. Rimando, et al.; J. Agric. Food Chem. 53, 3403; 2005)

hamsters: 2.5 mg/kg = 0.337 mg/kg for humans

= 24.6 mg for a 160 pound person

Diabetes paper (L. Pari & M.A. Satheesh; Life Sci. 79, 641; 2006)

rats: 10 - 40 mg/kg = 1.62 - 6.48 mg/kg for humans

= 117.8 - 471.3 mg for a 160 pound person

Cognitive Function paper (J. Joseph et al.; J. Agric. Food Chem. 56, 10544; 2008)

rats: 2.5 - 10 mg/kg = 0.41 - 1.62 mg/kg for humans

= 29.8 - 117.8 mg for a 160 pound person

Recommended dose: 50-150 mg per day



Pterostilbene Toxicity

28-day subchronic toxicity study in mice

Doses/day (mg/kg of body weight): 30, 300, 3000

- HED for a 154 pound person = 125 mg/day, 1.25 g/day, 12.5 g/day, respectively

Table 4. Urinary Balance in Male and Female Swiss Mice Treated Orally with the Highest Dose Administrated of Pterostilbene

	r	nale	female		
	control	P3	control	P3	
specific weight (×103)	1.007 ± 2.8	1.011 ± 2.5	1.01 ± 2.5	1.01 ± 2.5	
pH	8.2 ± 0.5	6.5 ± 0.6	8.2 ± 0.9	6.5 ± 0.6	
leukocites μL^{-1}	negative	negative	negative	negative	
nitrite	negative	negative	negative	negative	
protein (g L ⁻¹)	0.2	0.3	0.15	0.15	
glucose	normal	normal	normal	normal	
ketones	negative	negative	negative	negative	
urobilinogen	normal	normal	normal	normal	
bilirubin	negative	negative	negative	negative	
blood/hemoglobin (erythrocytes μL^{-1})	ca. 11	ca. 25	ca. 10	ca. 23	

3. RESULTS

After daily oral administration of either of the doses tested for the 28 days period, there were no deaths. No evident treatmentrelated effect was observed on behavior. Clinical chemistry and hematological and histopathological analyses revealed that oral intake of high doses of t-PTER and QUER is safe, since this is not associated with significant local or systemic toxicity. M.J. Ruiz et al.; J. Agric. Food Chem. 57, 3180 (2009)



Pterostilbene: Extract vs. pTeroPure

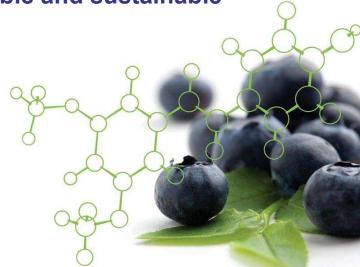
Extracted material

- Low purity (5-25%)
 - contains unknown chemicals other than pterostilbene (GMP compliance)
 - difficult to achieve a clinically relevant dose in a small capsule
- Typically extracted from *Pterocarpus* marsupium tree (the levels found in blueberries and other small fruits are too low to be considered a commercially viable source).
 - non-renewable resource
 - endangered species

pTeroPure

- High purity (99+%)
 - contains pterostilbene only
 - easy to achieve a clinically relevant dose in a small capsule

 Chemical starting material is renewable and sustainable





pTeroPure pterostilbene clinical studies

First Human Clinical Study Utilizing Pterostilbene:

- ChromaDex in collaboration with the University of Mississippi
- Primary Endpoint: Cholesterol
- Secondary Endpoints: <u>Blood Pressure</u> and <u>Oxidative Stress Markers</u>
- 4 Arms with 20 people per arm = 80 total participants
 - 100mg pterostilbene + 200mg Shanstar grape extract/day
 - 100mg pterostilbene/day
 - 250mg pterostilbene/day
 - placebo



pTeroPure pterostilbene clinical studies

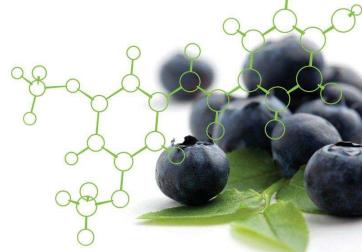
Month	Jun/Jul 10	Aug/Sep 10	Oct/Nov 10	Dec/Jan 10/11	Feb/Mar 11	Apr/May 11	Jun/Jul 11	Aug/Sep 11	Oct/Nov 11	Dec/Jan 11/12
Timeline										
IRB Approval					,	1	8			
Patient Recruitment/ Enrollment	8.			8	50		3			
Data Collection										
Planned Interim Analysis										
Data Analysis	No.								3 %	35.
Manuscript Preparation							8			
Results Presentation									20	
Submission of Final Report										
Submission of Manuscript			8							

pTeroPure Pterostilbene GRAS Status



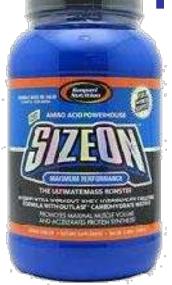
GRAS self-affirmation for pTeroPure
Pterostilbene in collaboration with AIBMR

Anticipated completion next year (can vary based on current FDA timeline for GRAS review and notification)



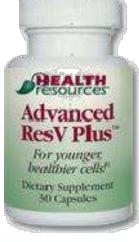
Current pTeroPure Pterostilbene

Products on the Market













Dietary Supplement







TRUE

Ultimate Res3

Dr. Cutler's

Novel Phytochemical Ingredients 10005 Muirlands Blvd, Suite G, Irvine, CA 92618 | Tel: 1-949-600-9694 | Email: sales@pteropure.com

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- Effect of pterostilbene on hepatic key enzymes of glucose metabolism in streptozotocinand nicotinamide-induced diabetic rats: L. Pari & M.A. Satheesh; Life Sci. 79, 641 (2006)
- Pterostilbene, an active constituent of blueberries, suppresses aberrant crypt foci formation in the azoxymethane-induced colon carcinogenesis model in rats: N. Suh et al.; Clin. Cancer Res. 13, 350 (2007)
- Pterostilbene induces apoptosis and cell cycle arrest in human gastric carcinoma cells: M.H. Pan, et al.; J. Agric. Food Chem. 55, 7777 (2007)

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- Dietary administration of high doses of pterostilbene and quercetin to mice is not toxic: M.J. Ruiz et al.; J Agric Food Chem. 57, 3180 (2009)
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- Pterostilbene inhibited tumor invasion via suppressing multiple signal transduction pathways in human hepatocellular carcinoma cells: M.H. Pan et al; Carcinogenesis. 30, 1234 (2009)
- Pterostilbene Inhibits Lung Cancer Through Induction of Apoptosis: J.G. Schneider et al.; J. Surg. Res. 161, 18 (2010)
- Antioxidant Effect of transResveratrol, Pterostilbene, Quercetin and Their Combinations in Human Erythrocytes In Vitro: R. Mikstacka et al.; Plant Foods Hum Nutr. 65, 57 (2010)
- Dietary intake of pterostilbene, a constituent of blueberries, inhibits the {beta}catenin/p65 downstream signaling pathway and colon carcinogenesis in rats: S. Paul et al.; Carcinogenesis. 31,1272 (2010)



Thank you!

pTeroPure Pterostilbene The Next Generation Resveratrol

Jeremy Bartos, PhD

Ingredients Product Manager

pTeroPure, a division of ChromaDex, Inc.

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EXHIBIT 24



Intro duc tion

ChromaDex promotes health and well-being through the discovery and development of nutraceutical ingredients - potentially beneficial molecules from plants that can be integrated into dietary supplements, nutritional products and functional foods.

p Tero Pure is a nature identical form of trans-Ptero stilbene. Ptero stilbene is an analog of resveratrol, which is one of the compounds thought to contribute to the "French Paradox" associated with red wine consumption. Like resveratrol, it belongs to a class of compounds called phytoalexins, which are naturally produced by plants when under attack by pathogens such as bacteria or fungi. And like resveratrol, there are animal studies showing it's efficacy at promoting heart health.2-4* Pterostilbene is one of several stilbenes found naturally in certain benies (e.g., bluebenies, cranbenies, sparklebenies, ling on be ries, and grapes), thus, consumption of the se small fruits may help improve health.5,6*

"The more we study Pterostilbene, the more we see its huge potential in the human health field."

-Dr. Agnes Rimando, USDA ARS⁵

Pte m stilb e ne is... The Next Generation Resverato l^{M}

- A methylated version of resveratrol found in berries^{7,8}
- Superior biological activity* 2,9-12
- Betteroral bio a vaila bility¹³⁻¹⁵
- Me ta bolizes more slowly in the body, allowing more time for its antioxidant activities to act^{13,15-17}
- Extensive tissue distribution 15



Phytochemical Profile of Pterostilbene

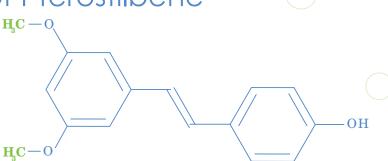
CAS#: 537-42-8 Molecular Weight: 256.299 Molecular Formula: $C_{16}H_{16}O_3$

Other Names: Me thylated Re sve ra trol

Dime tho xyre sve ra tro l

3',5'-Dime tho xy-4-stilb e no l

3,5-Dime tho xy-4' -hyd ro xy-tra ns-stilb e ne 4-(2-(3,5-Dime tho xyp he nyl)e the nyl)p he no l



DTer Pure

Why Pte rostilbene is Better Than Resveratrol



Pte ro stilbe ne and re svera trol have very similar chemical structures, however, Pte ro stilbe ne has several key advantages over re svera trol. The main difference between Pte ro stilbe ne and re svera trolis structural; Pte ro stilbe ne contains two me thoxy groups and one hydroxylgroup while re svera trolhas three hydroxylgroups. The two me thoxy groups cause Pte ro stilbe ne to be more lipophilic (oil-soluble) than re svera trol, which increases oral absorption and gives it a higher potential for cellular uptake. Pte ro stilbe ne also has a much longer half life in the blood than re svera trol (105 minutes vs. 14 minutes). A recent paper also demonstrated that when administered orally, Pterostilbe ne showed 80% bioavailability vs re svera trol's 20%, and Pterostilbe ne's lower total body clearance rates and subsequent $V_{\rm ss}$ value (measuring apparent volume of distribution) suggested extensive tissue distribution.

Several published studies refer to Pterostilbene as having better activity than resveratrol. For example in vitro studies show that unlike the related stilbenes resveratrol, piceatannol, or resveratrol trime thyle ther, Pterostilbene is a potent peroxisome proliferator activated receptor alpha (PPARa) agonist, lowering lipid levels in the blood stream, and animal studies show that Pterostilbene may help maintain cholesterollevels already within normal ranges. Both resveratrol and Pterostilbene have been shown to exhibit beneficial effects and support a healthy heart, however the structural modifications to resveratrol that are found in Pterostilbene are needed to increase its bioavailability while preserving the published beneficial activities. 2,11,12,17,20,21

How Pte rostilbene and Resveratrol Work Together

Pte ro stilb e ne and re sve ra trol both compounds, have very similar botanical functions. but published data suggests that they act very differently. Much of the bioassay and animal data suggests that pterostilbene is the most potent stilbene, following a different mechanism of action than resveratrol. However, researchers have suggested that these two compounds also work synergistically, supporting the theory that a combination of pterostilbene and resveratrol in a formulation may offer more support than using these ingredients separately. For example, a recent publication showed that pterostilbene and resveratrolact synergistically with anti-oxidant activities to help protect human erythrocytes from damage due to oxidative stress in vitro.22*

Potential Health Benefits of Pterostilbene

• Strong antioxidant activity* 10,24

4 | pTere Pure

- May have anti-aging properties* 10,25
- Published anti-inflammatory activity in vitro* 10,26,27
- \bullet Supports memory improvement and enhanced mental focus*10,25
- May help support against oxidative stress 10
- Mimic s c a lo rie restriction in vitro*
- Supports heart health* 2,3,5,28,29
- May be used to help maintain healthy cholesterollevels already within normal ranges* 2,3,5,28
- Orally active and may work to stabilize plasma glucose levels in some a nima ls* 2,18
- Po tential immune supporter³⁰
- Pro mo te s he a lth o f ne uro ns^{10,25}
- Calmative and may support mood and simple nervous tension*



Why p Te ro Pure °?

p Tero Pure Ptero stilbene is a nature-identical, 99+% pure, all-trans pte rostilbe ne. The pTe roPure brand Pte rostilbe ne issupe riorto natural extracts due to its high purity and its sustainable source material. The majority of the other Pterostilbene ingredients on the market are extracts made from Pterocarpus marsupium, an endangered tree found in India. The amounts of Pterostilbene found in the Pte rocarpus heartwood are low, leading to concentrated extracts typically in 5-25% range. The fact that Pte rocarpus is a threatened species further limits its use as a viable and sustainable source of Pterostilbene. Even though Pterostilbene is found in blueberies and other small be mies, it is typically in the 25-50ppm range, too small to be commercially viable sources. 6 p Tero Pure is also the only Pte ro stilbe ne to be used in sanctioned human clinical trials and the only Pterostilbene to have self-affirmed GRAS status.²³

> "Pterostilbene showed strong inhibitory activity - much more than resveratrolagainst a particular form of cytochrome P450."

-Dr. Agnes Rimando, USDA ARS⁵

Potential Are as of Interests for Sirtuins

SIRT1 Me tabolic, ne uro logical, mitochondrial*

SIRT2 Ne uro lo gic a l, me ta b o lic *

SIRT3 Me tabolic, mito chondrial, ne uro logical, cardio vascular*

SIRT4 Me ta b o lic, mito c hond ria l*

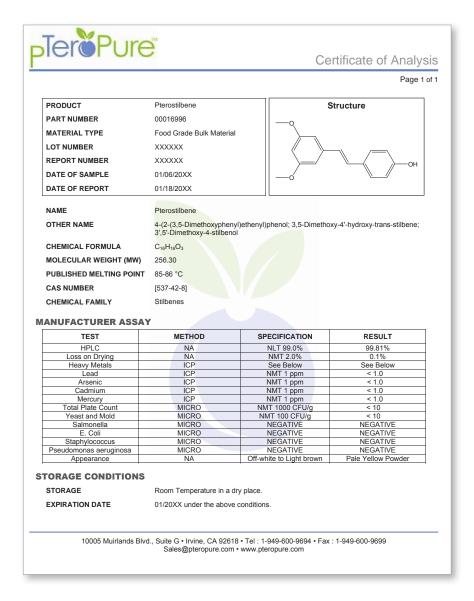
Me ta b o lic * SIRT5

SIRT6 Me ta b o lic *

SIRT7 Cardio va scular, me tabolic *

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Sample p Te ro Pure Pte ro stilb e ne Certificate of Analysis



Intelle c tual Property

In addition to working with other strategic partners, pTeroPure is a licensee of three U.S. patents from the USDA-ARS and the University of Mississippi and is working on the third patent with a strategic partner.

Patent Pending #1: "Pten stilbene as a New Agonist for the Penoxisome Proliferator-Activated Receptor Alpha Isoform."

Patent Pending #2: "Me tho d to Ame lio rate Oxidative Stress and Improve Working Me mory via Pterostilbene Administration."

Patent Pending #3: "A Key Intermediate for the Preparation of Stilbenes"

Patent Pending #4: "Anxiolytic effects of pterostilbene"

Patent Pending #5: "Me tho d for Inducing UDP-Gluc up no syltransferase Activity using Ptero stilbene"

PTer**®**Pure |

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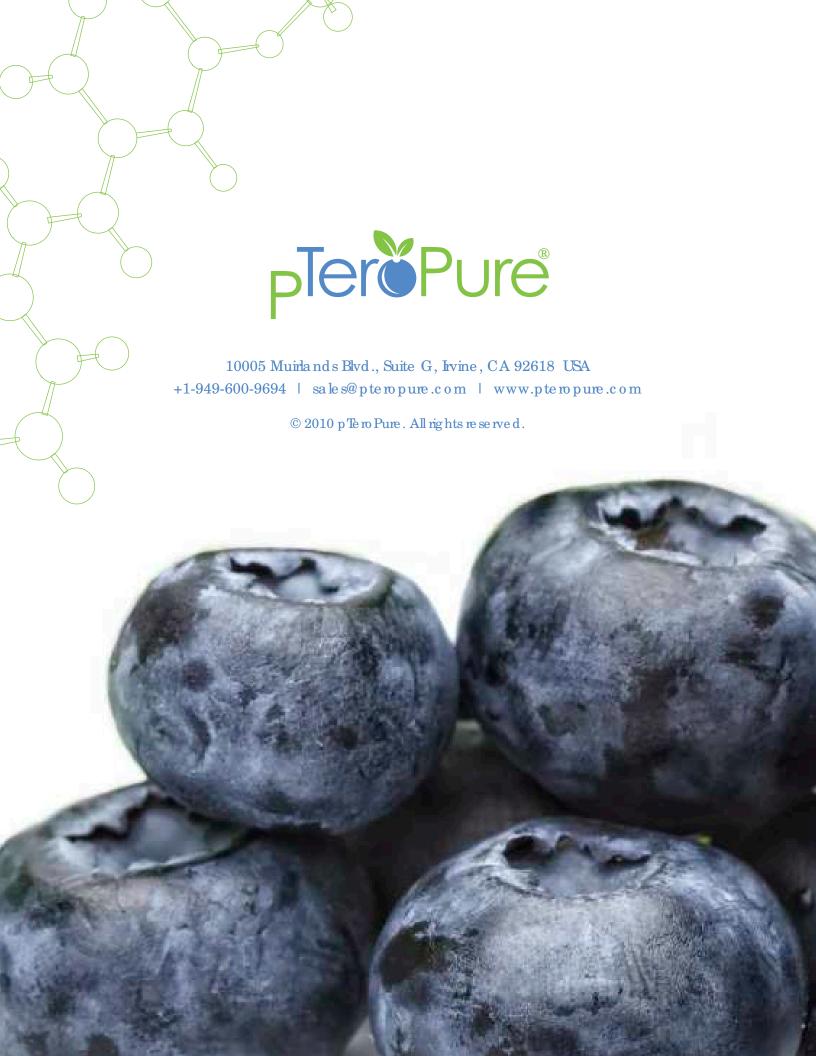


EXHIBIT 25



PROVIDING THE HIGHEST QUALITY CONDITION SPECIFIC

DIETARY SUPPLEMENTS



Pterostilbene

Dietary Supplement

60 Veggie Capsules (100 mg ea) 6 gr.

SKU: 27933



Quick Overview

Pterostilbene Dietary Supplement

Is a natural phytochemical found in small berries and has been clinically shown to promote normal blood glucose and cholesterol levels, assist the body to normalize blood pressure and control soft tissue inflammation, improve cognitive function, and enhance the genetic benefits of calorie restriction.*

Pterostilbene—The Next Generation Resveratrol

Pterostilbene could very well be the most significant health discovery for avoiding or at least minimizing, many degenerative diseases and adding years of healthy living to your life. Pterostilbene is a photochemical found in small berries, most abundant in blue berries. It is a structural analog of resveratrol, and it shares many chemical, physiological and pharmacological health benefits of resveratrol such as; anti-aging, anti-diabetic, anti-inflammatory, anti-obesity, antioxidant, cognitive enhancement, and hypolipidemic activity (reduces excessive fats in the body and promotes healthy cholesterol)*. Yet it is far more powerful.

Chemically speaking, to call it methylated resveratrol would also be correct. In botany, like resveratrol it is a phytoalexin which is part of the plants defense mechanism and protects the plant against fungus and other microbes.

Laboratory and clinical studies clearly show pterostilbene has several advantages over resveratrol. It is more lipophilic than resveratrol giving it a higher potential for cellular uptake. It has greater bioavailability than resveratrol. And most significant it has 7.5 times greater half-life in the body. Resveratrol is active in the blood for approximately 14 minutes while pterostilbene is active in the blood for approximately 105 minutes. But probably the most amazing, life changing benefit of pterostilbene is it stimulates the genetic effects of caloric restriction.



The most common food source of pterostilbene is blueberries, but the amount is so small it would take approximately 4,500 cups of blueberries per day to get the effective dose level. Therefore, our pterostilbene has to be extracted from a source that has a much higher concentration of pterostilbene which is not found in a food source, but in an ancient Ayurvedic herb called the Indian Kino Tree (Pterocarpus marsupium).

Indian Kino Tree (Pterocarpus marsupium).



For more information about our products, please visit www.medicinalnutraceutics.com

Pterostilbene vs. Resveratrol

Pterostilbene is:

- Better absorbed and more biologically active
- Greater lipophilic properties¹
- · Higher potential for cellular uptake
- Greater metabolic stability
- Stronger anti-inflammatory properties
- Normalizes blood glucose levels better than resveratrol² and Metformin³ *
- · Longer half-life in the body than resveratrol

Resveratrol: ~14 minutes in blood (Asensi et al, Free Radic Biol Med. 33, 387, 2002)

Pterostilbene: ~ 105 minutes in blood (Remsberg et al, Phytother. Res. 22, 169, 2008)

Supplement Facts

Serving Size: 1 100 mg Veggie Capsules

Servings per Container: 60

Amount per Capsule % DV
Pterostilbene (Pterocarpus marsupium) 100 mg †
† Daily Value not established

Other Ingredients: Hydroxypropylmethylcellulose (vegetarian capsule), Methylcellulose, Silicon Mineral Complex, L-Leucine.

HYPOALLERGENIC: This product does not contain milk, eggs, soy, fish, Crustacean shellfish, tree nuts, peanuts, wheat, gluten, yeast, salt, preservatives, artificial color, flavor, or fragrances.

Suggested Use: Depending on your state of health or nutritional goals, take 1 capsule once or twice daily with meals, or as recommended by your health care provider.

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.



CALORIC RESTRICTION —

ABSOLUTELY THE MOST SIGNIFICANT STEP YOU CAN DO TO IMPROVE YOUR HEALTH AND CHANGE YOUR LIFE

The tremendous cost of obesity is well documented. Not just in terms of dollar cost from excessive medical bills and lost time at work, but the emotional and mental drain it causes. But few realize that caloric restriction actually turns on genes directly related to a longer life and genes that protect the body from many age related degenerative diseases⁴. This includes genes that reduce the activity of certain cancer-promoting agents, genes that induce the programmed death of cancer cells, and genes that confer neuroprotection⁵.*

It's truly remarkable how closely pterostilbene can mimic the beneficial effects of calorie restriction on a molecular level. Calorie restriction directly suppresses cancer-causing genes while up-regulating genes that suppress cancer development. In numerous studies pterostilbene modulates exactly the same genes, up-regulating those that stimulate the programmed cell death known as apoptosis, and down-regulating those that allow cancer cells to invade and metastasize⁶.*

Calorie restriction changes expression of genes throughout the metabolic process. It increases activity of powerful fat-sensing complexes that lower blood lipids and sugar levels. Pterostilbene naturally activates these same fat-sensing complexes and was found to favorably affect lipid profiles in hamsters with elevated cholesterol⁷.*

Calorie restriction dramatically reduces production of inflammatory mediators linked to age-related conditions such as atherosclerosis, chronic inflammatory diseases, and even cognitive decline*. At the level of gene expression, pterostilbene exerts virtually identical effects, suppressing those same genes in studies of inflammation-related conditions. And like calorie restriction, pterostilbene up-regulates specific brain proteins associated with improved memory⁸.*

PTEROSTILBENE SYNERGISTICALLY COMPLIMENTS THE HEALTH BENEFITS OF RESVERATROL

Resveratrol activates genes near the beginning of the molecular cascade precipitated by caloric restriction. These in turn activate a broad array of disease-preventing genes. In essence, resveratrol's beneficial genetic action takes place "upstream."

Pterostilbene directly activates genes "downstream" from the sites of resveratrol's action. This complements resveratrol's ability to help prevent cancer and diabetes, and supports healthy blood lipids*. Acting together, resveratrol and pterostilbene produce potent longevity-promoting effects across the cycle of gene expression through complementary mechanisms*.

Medicinal Nutraceutics™

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Clinical Studies and
Analytical Test Results
are available at

www.medicinalnutraceutics.com

¹ Rimando AM., Nagmani R., Feller DR., Yokoyama W.; "Pterostilbene, a new agonist for theperoxisome proliferator-activated receptor alpha-isoform, lowers plasma lipoproteins and cholesterol in hypercholesterolemic hamsters"; J agric Food Chem, 2005 May 4;53(9) 3403-7

² Ibid

³ Pari L., Satheesh MA., "Effect of pterostilbene on hepatic key enzymes of glucose metabolism in streptozotocin-and nicotinamide-induced diabetic rats",Life sci 2006 Jul 10;79(7):641-5 Epub 2008 Apr 17

⁴ Wood JG., Rogina B., Lavu S., Howitz K., Helfand SL., Tatar M., Sinclair D., "Sirtuin activators mimic caloric restriction and delay ageing in metazoans"; Nature 2004 Aug 5; 430 (7000) 686-9 Epub Jul 14

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⁸ Williams CM., El Mohsen MA., Vauzor D., Rendeiro C., Butler LT., Ellis JA., Witeman M., Spencer JP.; "Blueberry-induced changes in spatial working memory correlate with changes in hippocapal CREB phosphorylation and brain derived neurotropic factor (BDFN) levels"; Free Radic Biol Med 2008 Aug 1;45(3) 295-305 Epub 2008 May 5

EXHIBIT 26

AARON SHECHET Counsel@SolutionsLLP.com CHANDLER & SHECHET, LLP 1844 Bagley Avenue Los Angeles, CA 90035 Telephone: (310) 339-1354

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Attorneys for Opposer Biotivia, LLC

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

	pplication Serial No. 85193003 GENERATION RESVERATR zette on August 23, 2011	
BIOTIVIA, LLC	X	Opposition No.: 91202162 OPPOSER BIOTIVIA'S REQUESTS FOR ADMISSION, SET ONE
Opposer		
v.		
CHROMADEX, INC. Applicant	x	
REQUESTING PARTY:	Opposer Biotivia, LLC	
RESPONDING PARTY:	Applicant Chromadex, Inc.	
<u>SET</u> :	One	

Opposer Biotivia, LLC requests Applicant Chromadex, Inc. to admit, for the purpose of this action only and subject to all pertinent objections to admissibility that may be interposed at trial, the truth of the following matters:

Under the provisions of *Rule 36(a) of the Federal Rules of Civil Procedure*, you are required to respond to these Requests for Admission in writing within 30 days after service of the requests. Your response must be signed as required by *Rule 26(g) of the Federal Rules of Civil Procedure*. If you fail to respond to these Requests for Admission

within the 30-day period, every matter set forth in the requests may be deemed admitted and conclusively established against you for purposes of this action.

- 1. That each of the following documents, exhibited with this request and described below, is genuine:
 - a. Exhibit 1 Article about Chromadex's launch of BluScience from the website <a href="http://www.ibtimes.com/articles/161931/20110613/chromadex-corp-cdxc-to-launch-bluscience-line-of-supplement-products-via-major-retailer-gnc-nationwi.htm?utm_source=feedburner&utm_medium=feed&utm_campaig_n=Feed%3A+ibtimes%2Ftech+%28IBTimes.com+RSS+Feed+-+Technology%29
 - b. Exhibit 2 Description about Chromadex and PteroPure from Chromadex's website
 - c. Exhibit 3 Copies of portions of Pteropure.com
 - d. Exhibit 4 Definition of "next-generation" from dictionary.com
 - e. Exhibit 5 Description of pterostilbene from wikipedia.com
 - f. Exhibit 6 Article about Douglas Labs product "Pterostilbene Supreme" from the website http://www.nutritionaloutlook.com/news/douglas-labs-debuts-pterostilbene-supplement
 - g. Exhibit 7 Copy of the website http://www.great-forest.com/pro_detail_en/id/2.html
 - h. Exhibit 8 Copy of the website http://www.alcrea-health.com/blog/?p=70
 - i. Exhibit 9 Copy of the website http://naturalnews.com/027650_pterostilbene_health.html
 - j. Exhibit 10 Copy of the website http://whomovedmycheesecake.org/?p=427
 - k. Exhibit 11 Copy of the website http://www.greatforest.com/news_detail_en/id/5.html
 - Exhibit 12 Description of "Resveratrol-M" from the website http://www.restorehc.com/product/resveratrol-m
 - m. Exhibit 13 Copy of the electronic file located at http://www.restorehc.com/sites/default/files/uploaded-images/cardio-resveratrol-m_0.pdf describing "Resveratrol-M"

- n. Exhibit 14 Copy of the website http://www.wholehealth.com/health-articles/resveratrol-pterostilbene-may-support-cognitive-function
- o. Exhibit 15 Copy of the website http://blog.lef.org/2011/12/pterostilbene-other-resveratrol.html
- p. Exhibit 16 Copy of the website http://www.nutripharma.net/herb-pe/1503-Pterostilbene.html
- q. Exhibit 17 Copy of a portion of Chromadex's website https://chromadex.com/Detailsp.aspx?Aid=438
- r. Exhibit 18 Copy of the website http://www.iherb.com/Medicinal-Nutraceutics-Pterostilbene-100-mg-Each-60-Veggie-Caps/36723?utm_source=nt&utm_medium=c
- s. Exhibit 19 Copy of a portion of the Pteropure website http://www.pteropure.com/products/index.html

2. That each of the following statements is true:

- a. Chromadex, Inc. ("Chromadex") is a California corporation.
- b. Chromadex was established in 1999.
- c. Chromadex is a natural products company that provides proprietary, science based solutions and ingredients to the dietary supplement, food and beverage, cosmetic, and pharmaceutical industries.
- d. In April of 2010, Chromadex launched a product called pTeroPure.
- e. pTeroPure is a formulation of the compound pterostilbene.
- f. pTeroPure has been described by Chromadex as a proprietary, ultrapure formulation of the naturally occurring compound pterostilbene.
- g. In June of 2011, Chromadex launched a line of dietary supplements called BluScience, which features pTeroPure as an ingredient.
- h. The mark "THE NEXT GENERATION RESVERATROL" (the "Mark") has been applied to pTeropure.
- i. The Mark has been applied to BluScience products.

- j. The Mark has been applied to Chromadex products.
- k. Chromadex owns the domain pteropure.com.
- 1. Chromadex controls the website pteropure.com.
- m. Chromadex owns the domain chromadex.com.
- n. Chromadex controls the website chromadex.com.
- o. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter to an entity, other than Biotivia, LLC, which has applied the Mark to pterostilbene products.
- p. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter to an individual who has applied the Mark to pterostilbene products.
- q. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter regarding the Mark.
- r. Chromadex, directly or through its counsel, has filed at least one complaint against an entity which has applied the Mark to pterostilbene products.
- s. Chromadex, directly or through its counsel, has filed at least one complaint against an individual who has applied the Mark to pterostilbene products.
- t. Chromadex, directly or through its counsel, has filed at least one complaint regarding the Mark.
- u. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter to an entity, other than Biotivia, LLC, which has applied phrases similar to the Mark to pterostilbene products.
- v. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter, to an individual who has applied phrases similar to the Mark to pterostilbene products.
- w. Chromadex, directly or through its counsel, has filed at least one complaint against an entity, other than Biotivia, LLC, which has applied phrases similar to the Mark to pterostilbene products.

- x. Chromadex, directly or through its counsel, has filed at least one complaint against an individual who has applied phrases similar to the Mark to pterostilbene products.
- y. Chromadex filed a complaint against Biotivia, LLC for using the phrase "taking Resveratrol to the next level" in conjunction with Biotivia, LLC's pterosilbene product.
- z. Chromadex's complaint against Biotivia, LLC for using the phrase "taking Resveratrol to the next level" is based, in whole or in part, on the Mark.
- aa. Pterostilbene can be accurately described as a compound which is chemically related to resveratrol but has certain advantages over resveratrol.
- bb. Pterostilbene is chemically related to resveratrol.
- cc. Pterostilbene is a methylated resveratrol analog naturally found in berries with superior biological activity, better oral bioavailability, and metabolized more slowly in the body, allowing more time for its antioxidant activities to act.
- dd. The phrase "Next Generation" can be accurately defined as "pertaining to the next generation in a family; also, pertaining to the next stage of development or version of a product, service, or technology."
- ee. Pterostilbene is described as a compound which is chemically related to resveratrol on websites not owned by Chromadex.
- ff. Pterostilbene is described as the next generation of resveratrol on websites not owned by Chromadex.
- gg. Chromadex has approved the use of the Mark by its customers.
- hh. The Mark has not acquired secondary meaning.

CERTIFICATE OF SERVICE (37 C.F.R. §§ 2.101, 2.119

I, AARON SHECHET, Attorney of Record for Opposer, Biotivia, LLC, hereby certify that a true and correct copy of:

OPPOSER BIOTIVIA'S REQUESTS FOR ADMISSION, SET ONE

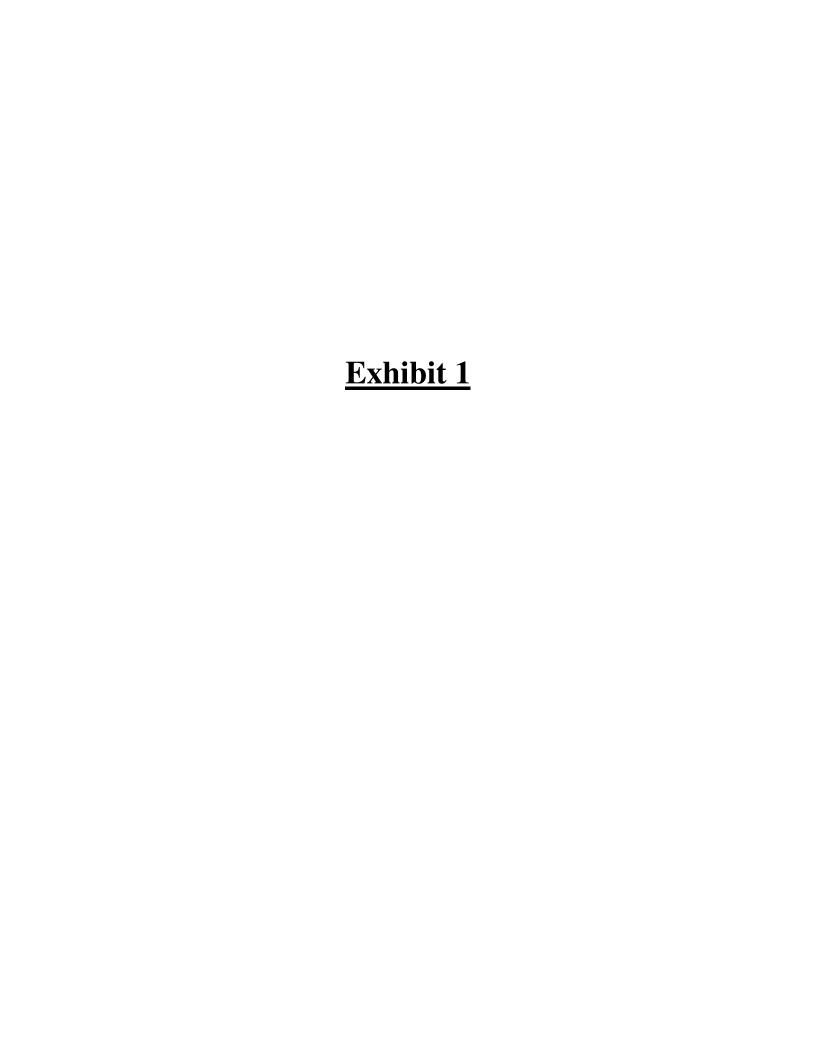
Was served by email, upon:

Trademark@fitcheven.com Jtnabo@fitcheven.com Attorneys for Chromadex, Inc.

On this February 8, 2012

Aaron Shechet

arroleis &



Print

Monday, June 13, 2011 11:42 AM EDT

ChromaDex Corp. (CDXC) to Launch BluScience Line of Supplement Products via Major Retailer GNC Nationwide this July

By QualityStocks

ChromaDex Corp., the established provider of top-quality ingredients and solutions as a natural products supplier to a variety of industries, reported the launch of its new BluScience dietary supplement line today.

BluScience products will feature the next generation resveratrol, pterostilbene (a polyphenol naturally occurring in blueberries), in the form of the Company's proprietarily refined natural, identical form of trans-pterostilbene, pTeroPure®.

BluScience is scheduled to hit shelves nationwide at major nutraceutical and supplements retailer GNC this July, in conjunction with a simultaneous web roll out via GNC.com.

The ultra purified form of the naturally occurring pterostilbene found in pTeroPure is vastly superior to resveratrol, offering significantly enhanced oral bioavailability and prolonged overall duration in the body, meaning that it will be absorbed better by tissues and have a longer-lasting effect.

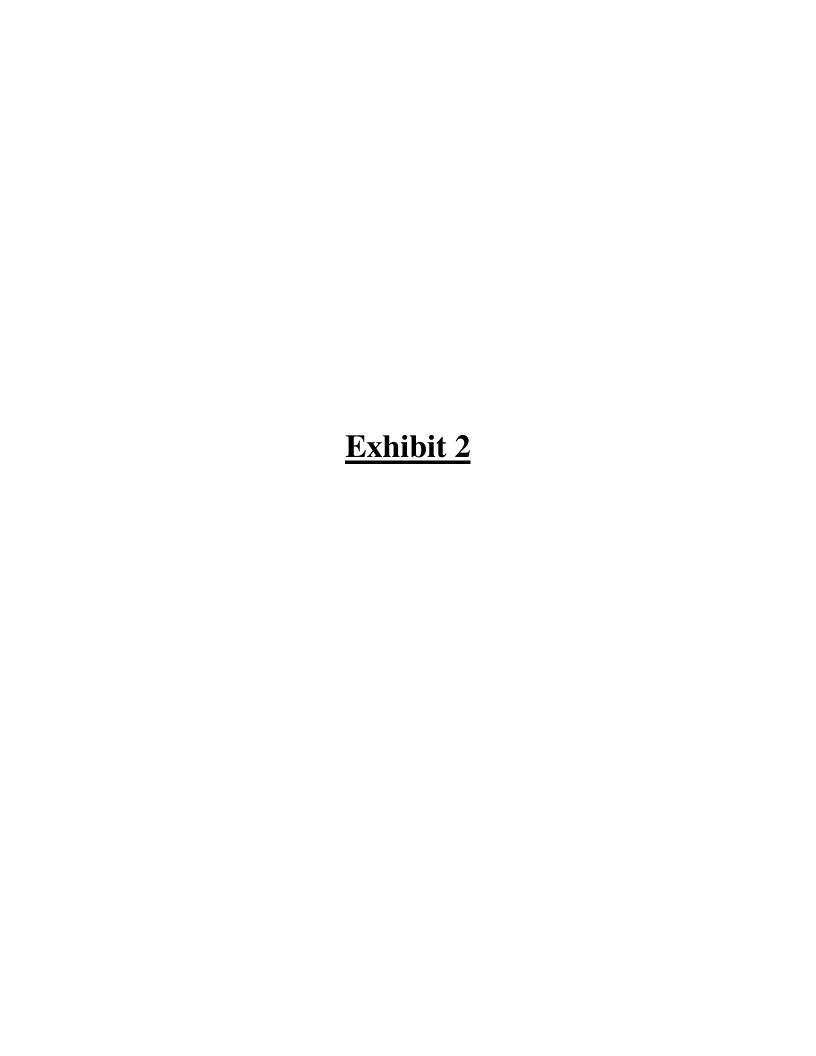
The BluScience family of products will feature a variety of pTeroPure-based offerings:

- HeartBlu fortified with blueberry extract and phytosterols, engineered specifically to maintain a healthy heart
- EternalBlu ameliorates oxidative stress and is packed with anti-oxidants
- TrimBlur packed with vitamins, minerals and jojoba for maximum metabolic support
- · Blu2Go is a melt super-charged with caffeine for energy boosting goodness

VP of Merchandising at GNC, Ted Deitrick, hailed the novel pTeroPure-based lineup of products that BluScience consists of and was clearly pleased that GNC would be making them available in stores this July, adding that the products are ideal for maintaining GNC's reputation for having a serious commitment to health.

President of CDXC, William Spengler, called the launch of BluScience a major milestone, both for the Company as a whole and for the advancement of pTeroPure's commercialization objectives. Spengler cheered GNC as the perfect place to get the kind of exposure the product line demands and remarked that it was guite auspicious for CDXC's first national consumer launch.

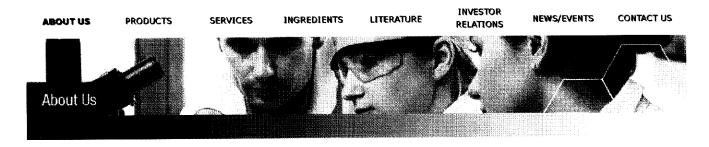
Spengler cited the massive target market in the US for BlueScience, consisting of over half the population, who see vitamins and nutrient supplements as part of an everyday healthy lifestyle.



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About ChromaDex

ChromaDex® is an innovative **natural products** company that provides **proprietary**, **science-based** solutions and ingredients to the dietary supplement, food & beverage, cosmetic, and pharmaceutical industries.

In particular, ChromaDex®

- Develops & markets phytochemical and botanical reference standards & materials
- Develops & markets novel & natural products that have a positive impact on health
- Brings safety & quality to the market with specialized services and scientific rigor

ChromaDex® was established in 1999 in response to growing demand for natural product reference standards, materials, and services. This growth has continued with increasing consumer and government demand for quality assurance methods across the spectrum of consumer-focused products.

Today, ChromaDex® continues it's leadership in the reference standards & services business with a customercentric approach supported by scientific rigor. Its expertise in this market gives it a unique foundation for combining the power of nature with the science of health to develop & market natural & novel ingredients.

 ${\sf ChromaDex}^{\circledR} \ {\sf is \ publicly-traded \ company \ (OTCBB:CDXC.OB)}.$

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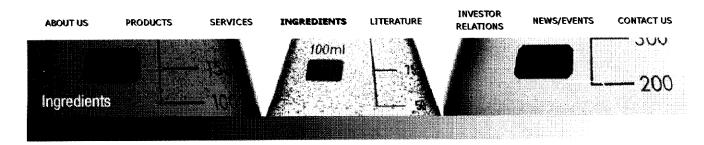
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About ChromaDex Ingredients

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pTeroPure



pTeroPure Pterostilbene was founded as a high-quality brand of ChromaDex® as a result of its exclusive worldwide patent rights for pterostilbene based on the technology licensed from the University of Mississippi and the USDA. Like resveratrol, pterostilbene (tero-STILL-bean) belongs to a class of compounds called phytoalexins, which are naturally produced by plants when under attack by pathogens such as bacteria or fungi. Pterostilbene and resveratrol have very similar pharmacologic properties, however pterostilbene has several key advantages over resveratrol. Pterostilbene is one of several stilbenes found in certain berries (e.g., blueberries, cranberries, sparkleberries, lingonberries, and grapes), thus, consumption of these small fruits may help improve health.

pTeroPure is a nature identical form of trans-pterostilbene. Pterostilbene is the next generation of resveratrol as it a methylated resveratrol analog naturally found in berries with superior biological activity, better oral bioavailability, and metabolizes more slowly in the body, allowing more time for its antioxidant activities to act. Please contact your ChromaDex® representative today for pricing or to receive a sample.

Visit the pTeroPure website



ChromaDex® pTeroPure Pterostilbene Brochure



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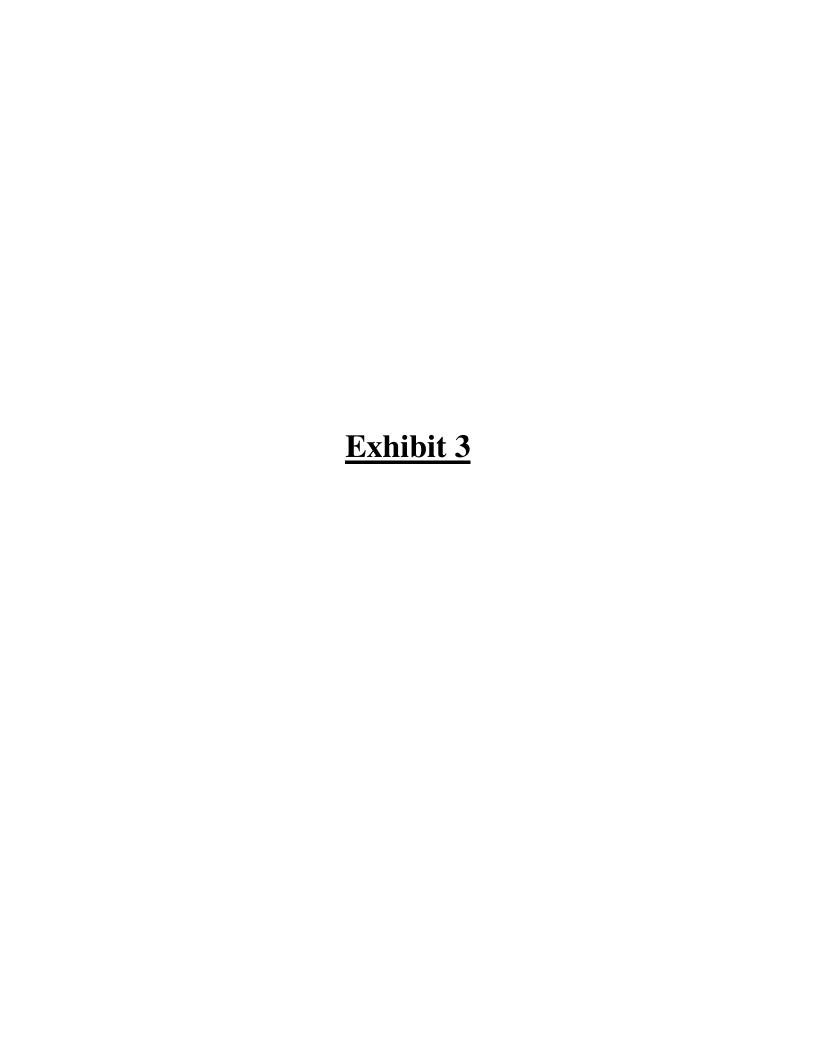
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Pterostilbene - Overview

Pterostilbene - pronounced [tero-still-bean]

- Is a polyphenol that occurs naturally in blueberries
- . Is a phytoalexin, acting as the blueberry's defense system
- Has been used for thousands of years in Indian Ayurvedic medicine as a "blood tonic"
- Is supported by scientific research "The more we study Pterostilbene, the more we see its huge potential in the human health field." Dr. Agnes Rimando, USDA – ARS
- Has the following significant advantages over resveratrol (also a phytoalexin but found in grapes):
 - Much improved bio-availability 70-90% versus 20-30%)
 - Much longer presence in the body (105 minutes versus 14 minutes)
 - Greater oral absorption
 - Greater metabolic stability



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Pterostilbene - Literature

Brochure

Pterostilbene: The Science Behind the Next Generation Resveratrol Literature Review

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About Us - pTeroPure®

pTeroPure was founded as a high-quality raw materials brand of ChromaDex as a result of its exclusive worldwide patent rights for pterostilbene based on the technology licensed from the University of Mississippi and the USDA. ChromaDex promotes health and well-being through the discovery and development of nutraceutical ingredients - naturally ocurring molecules that can be integrated into dietary supplements, nutritional products and functional foods. In a consolidating industry, ChromaDex has established itself by combining scientific rigor to its products and services along with a strong customer centric business model. ChromaDex is a Life Sciences business that is publicly traded. (OTC stock symbol



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Pterostilbene - Why pTeroPure™?

pTeroPure will promote health and well-being through the discovery and development of nutraccutical ingredients - naturally occurring molecules that can be integrated into dietary supplements, nutritional products and functional foods. Like resveratrol, pterostilbene (tero-STILL-bean) belongs to a class of compounds called phytoalexins, which are naturally produced by plants when under attack by pathogens such as bacteria or fungi. Pterostilbene and resveratrol have very similar pharmacologic properties, however pterostilbene has several key advantages over resveratrol. Pterostilbene is one of several stilbenes found in certain berries (e.g., blueberries, cranberries, sparkleberries, lingonberries, and grapes), thus, consumption of these small fruits may help improve health.

pTeroPure is a nature identical form of trans-pterostilbene. Pterostilbene is the next generation of resveratrol:

- · a methylated resveratrol analog naturally found in berries
- · superior biological activity
- better oral bioavailability
- · metabolizes more slowly in the body, allowing more time for its antioxidant activities to act



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Pterostilbene - Science - Webinar

The presentation will focus on pterostilbene, a natural derivative of resveratrol found in small berries such as blueberries and grapes. Like resveratrol, pterostilbene functions as an antioxidant and an anti-aging agent and has been shown to help lower cholesterol and blood glucose levels. Unlike resveratrol, pterostilbene has greatly improved oral adsorption and metabolizes more slowly in the body, allowing more time for its antioxidant activities to take place. The presentation will also explain the science behind pterostilbene's ability to lower cholesterol and how it acts to reduce oxidative stress and promote anti-aging.

"The science behind the use of pterostilbene as an alternative to resveratrol is sound, and with the advent of the first human clinical study on pterostilbene that we are conducting in collaboration with the University of Mississippi, pterostilbene is here to stay." said Frank L. Jaksch Jr., cofounder and CEO of ChromaDex. "The science behind the use of pterostilbene as an alternative to resveratrol is sound, and we anticipate pterostilbene to break in to the anti-inflammatory and pain management sectors as well."

Speakers include:

Agnes Rimando, Ph.D., Research Chemist USDA, ARS University, MS

- Learn how pterostilbene functions as a neuroprotecting agent and thus acts as a potential cognitive function enhancer.
- Discover the anti-oxidant potential of pterostilbene and how it acts to protect cells from oxidative stress

Dennis Feller, Ph.D., Chair (retired), Dept. of Pharmacology College of Pharmacy, University of Mississippi

Learn about the role of pterostilbene as a PPAR-alpha agonist in the lowering of cholesterol

Jeremy Bartos, Ph.D., Ingredients Brand Manager, pTeroPure

- Grasp the similarities and differences between pterostilbene and resveratrol and why pterostilbene has a higher biopotential and bioavailability than resveratrol
- Receive a brief overview of recently published science supporting the benefits of pterostilbene from heart health and anti-aging to diabetes and cancer

The webinar is hosted by the American Council for Medicinally Active Plants (ACMAP) / pTeroPure.

Webinar available now on demand, click here.



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Pterostilbene - Science - VendorWorks

Pterostilbene - The Next Generation Resveratrol

Pterostilbene is a relative of resveratrol naturally found in small fruits such as blueberries and cranberries. Like resveratrol, it functions as an antioxidant and an anti-aging agent, improving mitochondrial function and protecting against metabolic disease by activating SIRT1 and mimicking calorie restriction. Unlike resveratrol, pterostilbene has greatly improved oral adsorption and metabolizes more slowly in the body, allowing more time for its antioxidant activities to take place.

Since pterostilbene is also synergistic with resveratrol, addition of pterostilbene to existing resveratrol products may enhance their efficacy. The pterostilbene products developed by pTeroPure are based on the technologies licensed from the USDA ARS and the University of Mississippi.

Speaker: Jeremy Bartos, Ph.D., ingredient products manager, pTeroPure (a division of ChromaDex)

VendorWorks at SupplySide 2010

VendorWorks Presentation



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Pterostilbene - Science - Comparisons with Resveratrol

Pterostilbene and resveratrol have very similar pharmacologic properties, however Pterostilbene has several key advantages over resveratrol. The main difference between Pterostilbene and resveratrol is structural; Pterostilbene contains two methoxy groups and one hydroxyl group while resveratrol has three hydroxyl groups.



The two methoxy groups cause Pterostilbene to be more lipophilic (oil-soluble) than resveratrol, which increases oral absorption and gives it a higher potential for cellular uptake, while reducing the rate of elimination from the body. ¹

Pterostilbene also has a much longer half life in the blood than resveratrol (105 minutes vs. 14 minutes)^{2,3}, and has shown higher bioactivity in methods to improve heart health and reduce the effects of oxidative stress.^{4,5} Pterostilbene and resveratrol are synergistic however, with improved ability to protect against oxidative damage when taken together.⁶

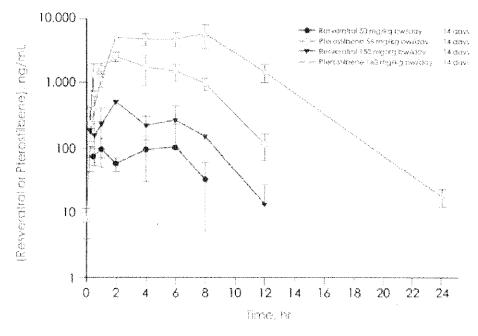
Comparisons with Resveratrol - Bioavailability

In the instance of stilbenoids, the key to bioactivity is bioavailability. During first pass through the body, the liver acts as a gatekeeper, filtering out and metabolizing foreign compounds such as pollutants, pharmaceuticals and phytochemicals. By "tagging" these compounds it renders them bio-inactive and marks them for elimination from the body. For stilbenes the liver will glucuronidate or sulfate the compound by adding a form of glucose or a sulfate group to any free hydroxyls on the structure.

Resveratrol has three places where it can be "tagged" while pterostilbene only has one, meaning that resveratrol is rapidly cleaned out by the liver while pterostilbene is allowed to continue on in the blood stream and eventually localize in the areas of need in the body. A recent paper has demonstrated that when administered orally, Pterostilbene shows 95% bioavailability while resveratrol only has 20% bioavailability. Additionally, pterostilbene's lower total body clearance rates and subsequent Vss value (measuring apparent volume of distribution) suggest extensive tissue distribution.

Comparisons with Resveratrol - Half-Life

Because of the extent of glucuronidation and sulfation of resveratrol by the liver, its half-life in the blood is ~14 minutes. With the two methoxy groups, pterostilbene is more robust with a half-life of ~105 minutes, over 7x longer than resveratrol. This means that if a product contains 100mg each of both pterostilbene and resveratrol, by the time you lost 50 mg of pterostilbene in the blood you have already lost 99.25 mg of the resveratrol that you took at the same time! The graph below shows blood concentrations of pterostilbene and resveratrol over a 24 hour time period, note that the scale is logarithmic. 1

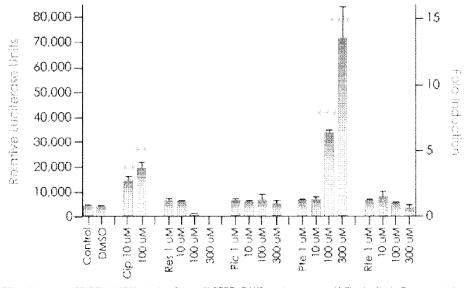


Plasma concentration—time curves for resveratrol and pterostifiene. Animals were orally dosed daily for 14 days, and pharmacokinetic profiles were obtained after the last dose. Symbols represent mean \pm SD for n = 3. From Kapetanovic et al., Cancer Chemother Pharmacol. 2010 Nov 30

Comparisons with Resveratrol - Bioactivity

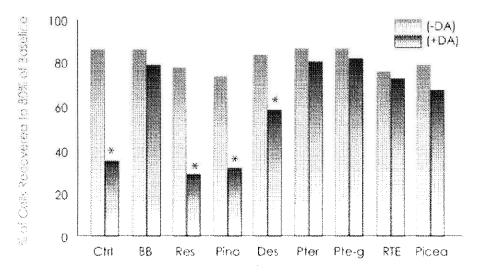
Due to the addition of the two methoxy groups, pterostilbene is more lipophilic (oil-soluble) than resveratrol. This allows pterostilbene easier uptake through the cell's lipid bilayer and thus gives it a higher potential for cellular uptake. Several published studies also refer to pterostilbene as having better bioactivity than resveratrol.

For example, it has been shown that unlike the resveratrol and related stilbenes piceatannol and trimethoxystilbene, pterostilbene is a potent peroxisome proliferator activated receptor alpha (PPARa) agonist, lowering lipid levels in the blood stream to reduce cholesterol levels at a higher rate than even pharmaceuticals such as ciprofibrate⁴



Effect of stilberies on PPARR in H4IIEC3 cells transfected with PPRE-AB LUC reporter gene plasmid. Cip, ciprofibrate, Res. resveratrol; Pic piceatannot, Pe, pterostilbene and Rte resveratrol tranethyl ether. "Significantly different from control p.) 0.001, n.) 4. Control is media only; DMSO is solvent control without test compounds. From Rimando et al., 2005. Reproduced by permission of the author.

In addition, pterostilbene is able to protect cells from oxidative stress in vitro, while resveratrol is not.⁵



Mean Ca2+ recovery in M1-transfected COS-7 cells control and treated with the stillbenes, following 0 (+DA) or 1 mM Departine (+DA) treatment. "Difference in recovery between non-DA-treated and DA-treated cells for each treatment ($p \times 0.001$). Chi = control cells. B8 = cells given Blueberry Extract, Res = Resveratrol. Pino = Pinostilhene, Des = Descryftaponisgeran, Pter = Pterostilhene, Pte-G = Pterostilhene, Giucoside, RTE = trimethoxysiblene, Pte-a = Piceatannol. From Joseph et al., J. Agric. Food Chem. 66:10544-10551 (2008). Reproduced with permission of the authors.

Both resveratrol and pterostilbene have also been shown to exhibit beneficial effects in the control of atherosclerosis and heart disease, however the structural modifications to resveratrol that are found in pterostilbene are needed to increase its bioavailability while preserving the published beneficial activities. ¹⁻³

Comparisons with Resveratrol - Synergism

Researchers have also shown that there are synergistic effects when resveratrol is combined with pterostilbene. For example, an in vitro assay was set up to measure the ability of pterostilbene and resveratrol to protect human erythrocytes from damage caused by an oxidative stressor. They showed that the combination of pterostilbene and resveratrol was better than the effect of either compound alone. This synergistic effect was not seen between resveratrol and quercetin nor pterostilbene and quercetin. In fact, quercetin with either compound was less effective than the compounds on their own, demonstrating an antagonistic effect.

Total concentration (pM)°	Combination index ^b						
•	Quercetin + Resveratrol	Quercetin + Pterostilbene	Resveratrol + Ptersotilbene				
2.5	0.57 ± 0.15°	2.86 ± 0.50	$0.45 \pm 0.10^{\circ\circ}$				
5	0.65 ± 0.21°	0.90 ± 0.11	0.46 ± 0.18°				
10	0.90 ± 0.46	1.27 ± 0.30	0.65 ± 0.11°				
20	1.06 ± 0.37	1.43 ± 0.40	$0.53 \pm 0.12^{\circ}$				
40	0.95 ± 0.59	1.70 ± 0.67	0.82 ± 0.13°				
60	0.80 ± 0.16	1.66 ± 0.41	0.89 ± 0.06°				
80	1.04 ± 0.23	1.75 ± 0.61	1.18 ± 0.06				
100	1,29 ± 0.24	1.41 ± 0.56	1.47 ± 0.02				

Combination index for LPO inhibition in human crythrocytes by mixtures of quercetin, trans- resveratrol and pterostilbene, From Mikstacka et al., Plant Foods Hum Nutr. 65, 57 (2016). Reproduced with permission of the authors.

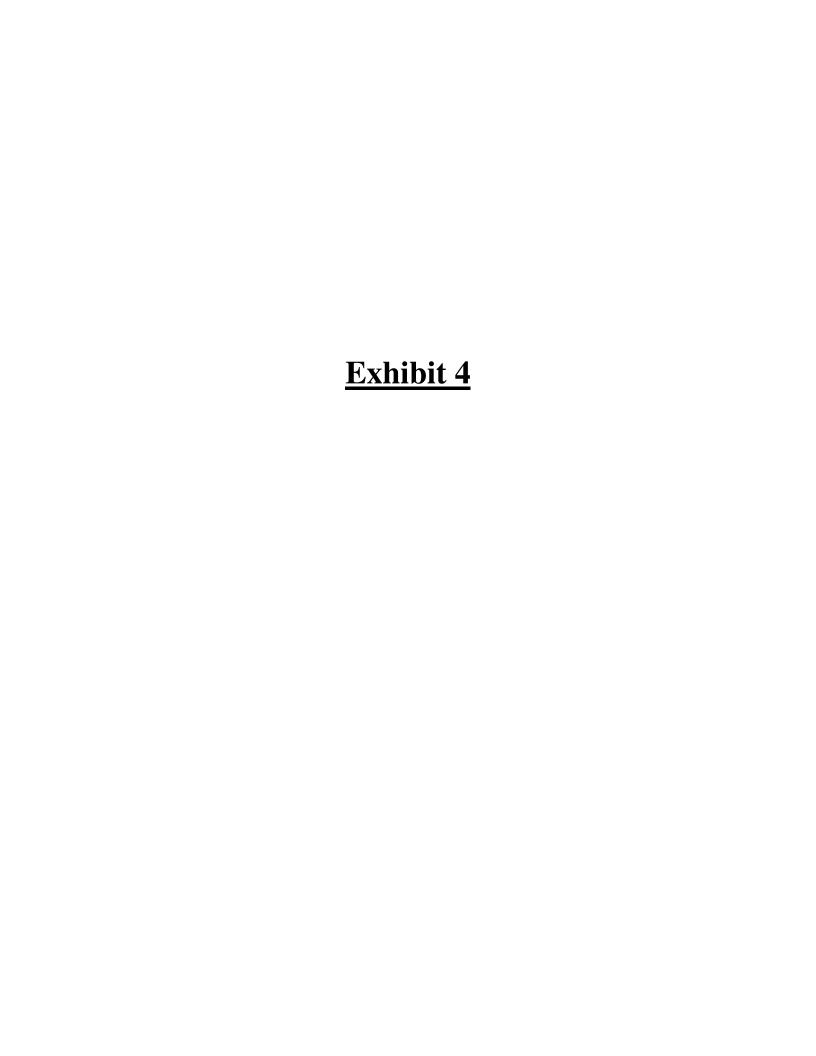
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next-generation



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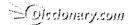
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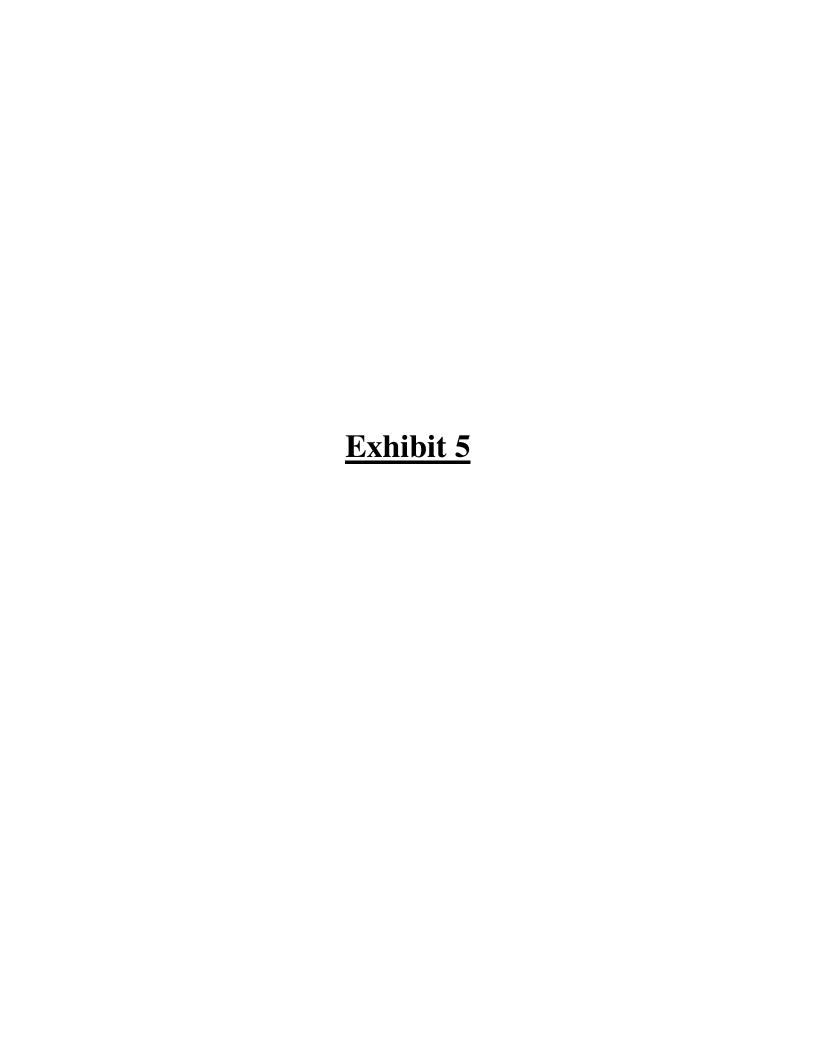
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Pterostilbene

From Wikipedia, the free encyclopedia

Pterostilbene is a stilbenoid chemically related to resveratrol and is found in blueberries and grapes. It belongs to the group of phytoalexins, agents produced by plants to fight infections. Based on animal studies it is thought to exhibit anti-cancer, anti-hypercholesterolemia, anti-hypertriglyceridemia properties, as well as fight off and reverse cognitive decline. It is believed that the compound also has anti-diabetic properties, but so far very little has been studied on this issue.

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- 1 Pharmacokinetics
- 2 Animal studies
 - 2.1 Lowering blood lipids and cholesterol
 - 2.2 Diabetes
 - 2.3 Cognitive decline
 - 2.4 Possible anti-cancer effects
- 3 Human studies
- 4 In wine
- 5 Toxicity
- 6 See also
- 7 References
- 8 External links

Pharmacokinetics					
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	Pterostilbene
	H ₃ CO OH OH OCH ₃
	IUPAC name
4	1-[(E)-2-(3,5-Dimethoxyphenyl)ethenyl]phenol
	Other names
·	3',5'-Dimethoxy-4-stilbenol 3,5-Dimethoxy-4'-hydroxy- <i>E</i> -stilbene
	Identifiers
CAS number	537-42-8
PubChem	5281727
ChemSpider	4445042
ChEMBL	CHEMBL83527
Jmol-3D	Image 1 (http://chemapps.stolaf.edu
images	/jmol/jmol.php?model=O%28c1cc%28cc%28OC%29c1
an aan aram kan saar aram aram ar	%29%5CC%3DC%5Cc2ccc%28O%29cc2%29C)
	SMILES
	InChI
Editorio Italia de Editorio de	Properties
Molecular formula	C ₁₆ H ₁₆ O ₃
Molar mass	256.296 g/mol
Exact mass	256.109944
Except wh	★ (verify) (what is: ✓/★?) here noted otherwise, data are given for materials in their standard state (at 25 °C, 100 kPa)
	Infobox references

Pterostilbene is a double-methylated version of resveratrol exhibiting a his

version of resveratrol exhibiting a higher bioavailability as it is more easily transported into the cell and more resistant to degradation and elimination. [2] In rats, pterostilbene's oral availability is 67%-94%, and its half-life has been published to be between 78 minutes and 104 minutes. [3][4][5]

Pterostilbene has anti-inflammatory, antineoplastic, and antioxidant actions via modulations of gene expression and enzyme activity. [2] In plants the substance displays antifungal [6] and antiviral activities. [7]

Focus of studies has been generally on the trans isomer of pterostilbene. [2]

Animal studies

Lowering blood lipids and cholesterol

Studies that used animals fed on blueberry based diets found significant reduction in blood lipid count and cholesterol count. While lipids and cholesterol stored in the cells do not pose much harm, elevated lipid and cholesterol levels in the blood have been linked to heart disease and stroke. In the mentioned study blueberries were found to be more effective than ciprofibrate, a cholesterol-lowering drug predominantly used outside the United States. [8] According to the study pterostilbene binds to PPARs, breaking down the cholesterol. [9]

Diabetes

Similar to what has been discovered with the drug metformin, pterostilbene has been shown to lower blood glucose levels in rats by as much as 56 percent, while simultaneously raising insulin and hemoglobin levels to near normal levels. [10]

Cognitive decline

In a study of 40 19-month-old rats fed either a normal diet or a diet containing blueberry, strawberry, or spinach extracts, the rats that were fed blueberry extracts had a significant reversal in motor-skill decline due to aging as well as other cognitive impairments. All of the diets above, except the normal one, resulted in some reversal or reduction of cognitive decline but none greater than the blueberry group. [11] Even when animal based studies yield positive results, the effects on humans may not be the same.

Possible anti-cancer effects

In 2002, Rimando and UIC collaborators found in experiments using rat mammary glands that pterostilbene possessed potent anti-oxidant characteristics and possible cancer-fighting properties at concentrations similar to resveratrol.^[12]

Additional work by Rimando and collaborators revealed a possible mechanism for pterostilbene's purported anti-cancer properties. Using mice cells, they demonstrated that pterostilbene, as well as other analogs of resveratrol, potently inhibits an enzyme called cytochrome P450. [citation needed] (Cytochromes are found within the cells of animals, plants, bacteria, and other microorganisms that transport electrons. They're also a factor in people's varying response to drugs and toxins entering their bodies. Cytochrome P450 enzymes activate a variety of compounds known as "procarcinogens," which can turn substances such as cigarette smoke and pesticides into carcinogens.)

According to Rimando, Pterostilbene showed strong inhibitory activity, much more than resveratrol,

2 of 5

against a particular form of cytochrome P450 in a mouse mammary gland culture assay.

Human studies

No randomized human studies have been completed, however the first human clinical trial on the effect of pterostilbene on cholesterol and blood pressure should run from Dec 2010 to Jan 2013 at the University of Mississippi. [13] Effect upon human health is an extrapolation of animal data. The data collected from rat studies suggest a dose of 50–100 mg of pterostilbene 2x/day, similar to the dosage of resveratrol. [10][14]

In wine

While resveratrol has been touted for its heart healthy benefits, pterostilbene is not found in wine despite darker grapes having the highest concentrations among the fruit. The reason believed is that it is unstable in light and air.

Toxicity

Pterostilbene is not known to be toxic to humans. [2]

See also

- Phytonutrients
- Phytosterol
- Blueberry
- Piceatannol, a stilbenoid related to both resveratrol and pterostilbene.
- List of phytochemicals and foods in which they are prominent

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External links

- Pterostilbene on diabetes, fungicides, and Pterostilbene vs. Resveratrol (http://www.scienceblog.com/community/older/2002/F/2002284.html)
- WebMD article on cognitive decline (http://www.webmd.com/content/article/93/102127.htm)
- Lowering cholesterol with pterostilbene (http://cholesterol.about.com/od/cholesterolnutrition101/a/blueberries.htm)

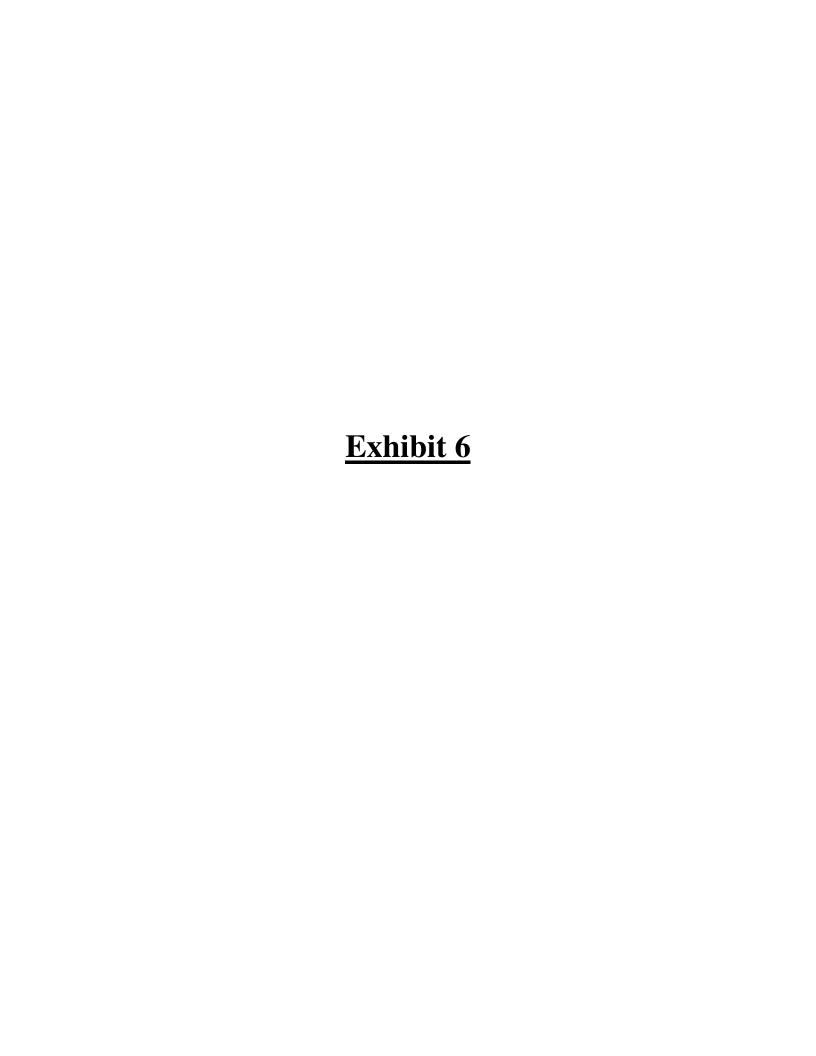
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The manufacturer's resource for dietary supplements & healthy foods and beverages

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Douglas Labs Debuts Pterostilbene Supplement

December 8, 2010

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Pterostilbene, which has been called a superior form of resveratrol, is the star of Douglas Laboratories' new Pterostilbene Supreme dietary supplement, available in January. In addition to 50 mg of pterostilbene and 100 mg of resveratrol per serving, the product provides 250 mg of Indena S.p.A.'s Meriva-brand curcumin phytosome and 1000 IU of vitamin D3 per serving.

Pterostilbene supplier pTeroPure Inc. (Irvine, CA) says that pterostilbene demonstrates better absorption and a higher potential for cellular uptake compared with resveratrol. It also has a longer half life in the blood compared with resveratrol (105 min. versus 14 min.), which pTeroPure says may allow for enhanced physiological effects.

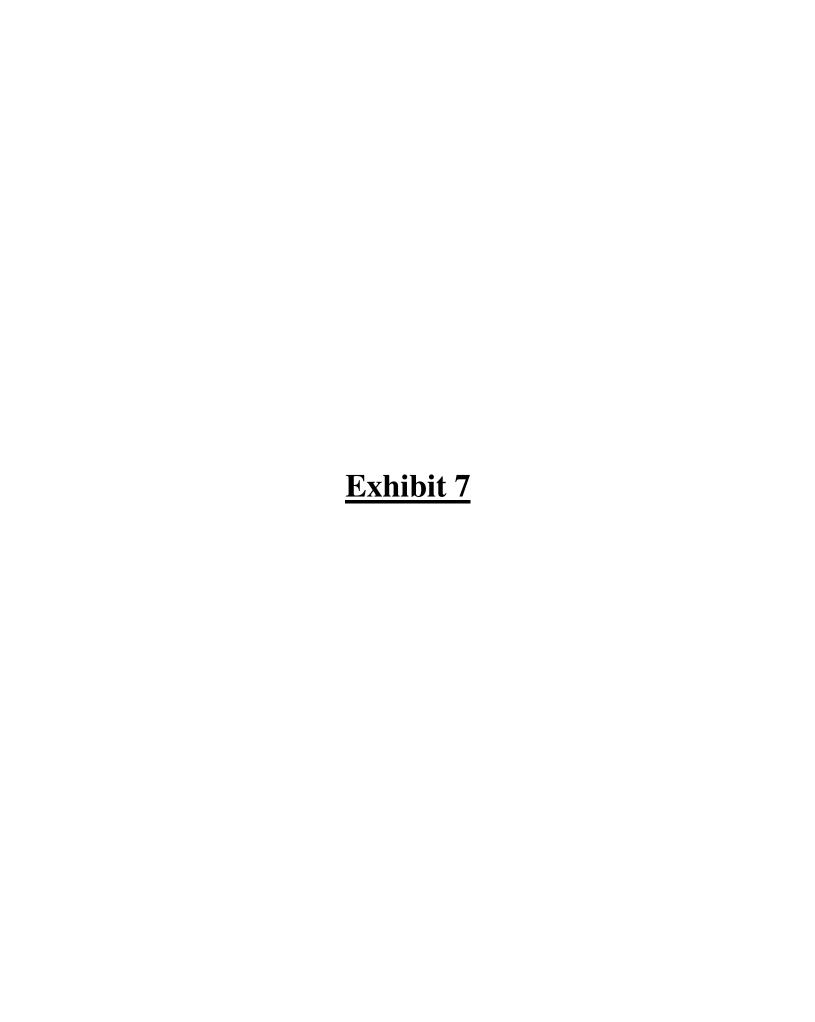
≥ (#) The company's pTeroPure brand of pterostilbene is a natureidentical, 99%+ trans-pterostilbene that pTeroPure says is

superior to other marketed stilbenes due to the ingredient's high purity and sustainable source material. The company says published reports have shown pterostilbene and resveratrol to be synergistic in protecting cells from damage caused by oxidative stress.

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Pterostilbene

Resveratrol Series

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Pyrazoles

Hydroquinolines

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Custom Products

CAS No: [537-42-8]

Molecular Formula: C₁₆H₁₆O₃

Specifications1: ≥99.5%, single impurity<0.1% (HPLC)

Specifications2: ≥99%, exclude one homologue, all other single impurity<0.1%

(HPLC)

Appearance: Off white crystal powder

mp: 89-92°C

Usage: Next generation of resveratrol, anti-oxidant and anti-inflammatory agent

Other Name:

Trans-Pterostilbene;

3,5-Dimethoxy-4'-hydroxy-trans-stilbene; Trans-3,5-Dimethoxy-4'-hydroxystilbene;

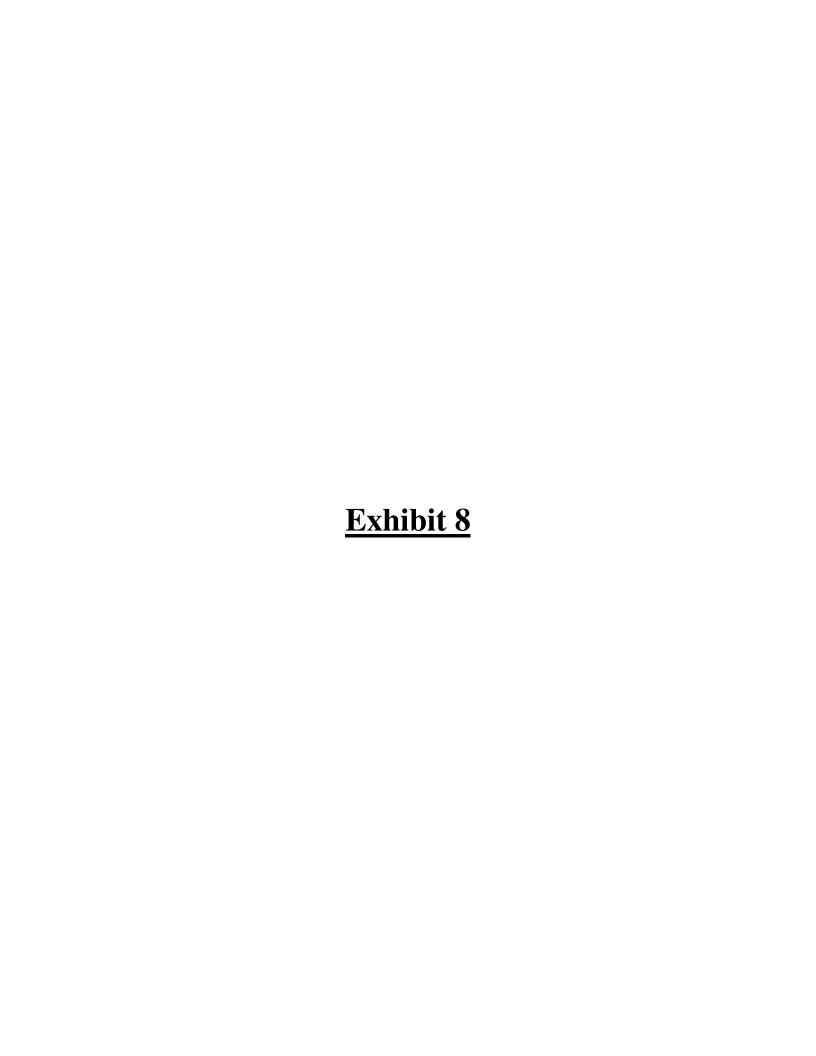
(E)-4-[2-(3,5-dimethoxyphenyl)ethenyl]-Phenol; 4-[(1E)-2-(3,5-dimethoxyphenyl)ethenyl]-Phenol

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Ingredient Spotlight: Pterostilbene, Next Generation Resveratrol

Posted on September 15, 2011 by AST

We see great potential for creating custom nutritional supplements using the potent antioxidant pterostilbene, offering health benefits ranging from anti-aging, heart health, oxidative stress and memory. Because of its better absorption and ability to last up to 7 times longer in the body than resveratrol, current science supports lower a daily dosage create an opportunity to include other key nutrients within the same supplement.

You may already know ..

Resveratrol is a naturally occurring plant polyphenol commonly found in grape vines and skins. Highly regarded as a powerful antioxidant, it plays supporting roles in normal cardiovascular and mitochondrial function. Studies also indicate resveratrol may be supportive in maintaining the normal aging process by helping to prevent free radical damage that can lead to premature aging of cells.

But are you aware ...

Pterostibene is a methylated resveratrol that is naturally occurring in berries Some advantages over resveratrol include

- · Superior biological activity
- · Better oral bioavailability
- · Slower metabolism in the body

The enhanced activity of pterostilbene compared to resveratrol may be explained by structural differences. Pterostilbene with two methoxy groups and one hydroxyl group has a greater ability to dissolve in fats, oils, lipids and non-polar solvents, and a higher potential for cellular uptake than resveratrol, which has three hydroxyl groups.

Pterostilbene also supports cardiovascular health. In vivo studies demonstrate that pterostilbene possesses lipid and glucose lowering effects.

Two may be better than one!

Both pterostilbene and resveratrol support mitochondrial function and healthy aging by activating SIRT1, a key enzyme in a family of proteins that have been associated with influencing aging, energy efficiency, and alertness during low-calorie intake.

Researchers have suggested that these two compounds also work synergistically. The combination of pterostilbene and resveratrol in a

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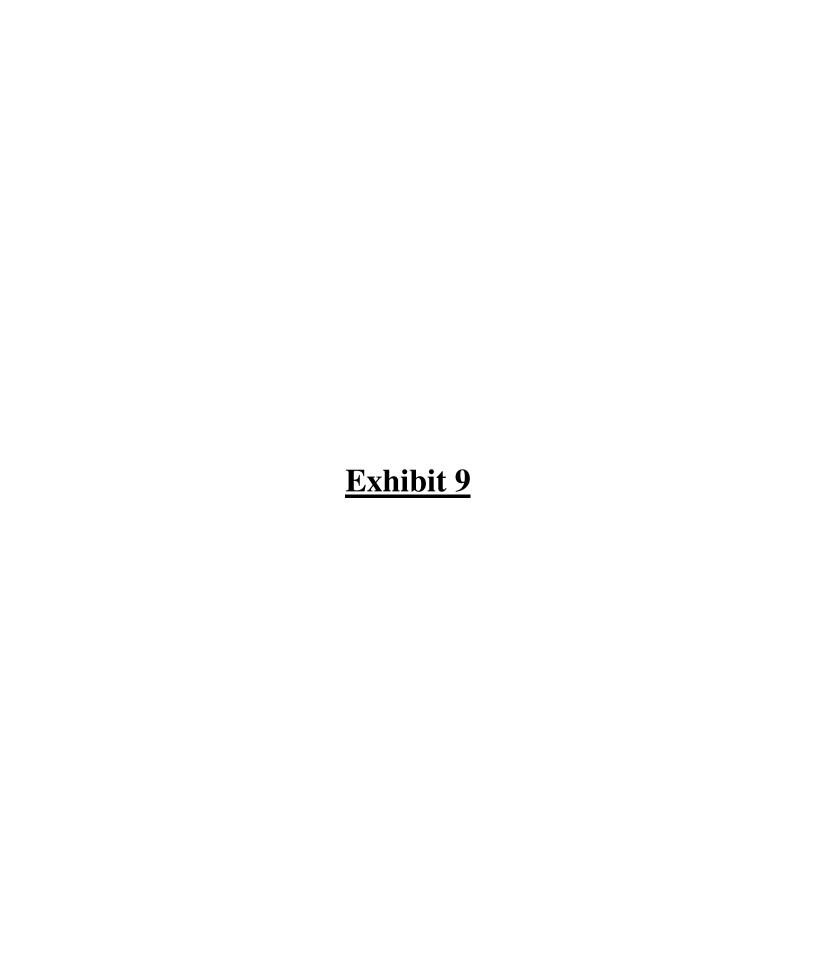
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Friday, December 04, 2009 by: Deanna Dean See all articles by this autho



(NaturalNews) You may not have heard of pterostilbene (pronounced "tero-Still-bean) yet. No, it's not a paleontologist 160 million year-old dream discovery along with Triceratopsan. It is exciting news nonetheless. Resveratrol grabbed our attention a decade ago with its cardiovascular and cancer-fighting benefits; now pterostilbene is making its debut. A derivative of resveratrol, the compound is found in the

skins of red grapes. Prospects are strong for inhibiting breast cancer, diabetes, and LDL cholesterol - for starters. "The more we study pterostilbene, the more we see its huge potential in the human health field," says chemist Agnes Rimando of ARS's Natural Products Utilization Research Laboratory in Oxford,

Found in blueberries, grapes and the bark of the Indian Kino Tree, pterostilbene has been around for centuries in Avurvedic medicine

Chemist Rimando began experimenting with pterostilbene as early as the 1990's when its fungicidal and antidiabetic properties had already been established. In 2002 Rimando and her University of Illinois at Chicago colleagues discovered pterostilbene mimicked the cancer-fighting properties of resveratrol. In that same study, Rimando, Oxford physiologist Stephen Duke, and scientists at the University of Buenos Aires in Argentina found that pterostilbene claimed yet another benefit as a powerful antioxidant

More recently Rimando and scientists at the University of Medical Science in Poznan, Poland held a study led by Renata Mikstacka, that showed pterostilbene's exciting potential as a cancer inhibiting compound with regard to certain enzymes. "Pterostilbene showed strong inhibitory activity against a particular form of cytochrome P450, which may explain the cancer preventive property it demonstrated," but she says more studies are needed to explain this process.

Korean cancer researchers agree there is growing evidence that pterostilbene provides chemoprevention, which is the use of natural or laboratory-made substances to prevent a disease such as cancer Pterostilbene's antioxidant strength and anti-inflammatory actions help block the inflammation/cancer

In another study using rat liver cells, university scientists compared the lipid-lowering effects of pterostilbene to that of ciprofibrate, a drug used for controlling lipids. Lipid tests are often part of preventative care that helps determine whether there is significant risk for arteriosclerosis, a hardening of the arteries that interferes with blood flow.

They based their comparison on each compound's ability to activate PPARa, short for peroxisome proliferator-activated receptor alpha. Activation leads to lowering of lipids in the blood. Pterostilbene outperformed resveratrol and was as effective as ciprofibrate in activating PPARa

It is remarkable what potential health benefits pterostilbene could offer. Increased life span, improvement in age related disorders such as atherosclerosis, chronic inflammatory diseases, cognitive decline, learning and memory, cancer prevention, and enhanced insulin sensitivity all stand as hopeful beneficiaries of this mighty chemical cousin of resveratrol. Be on the watch for this rising star

Your healthmate Deanna Dean

ihealthbulletin.com/.../news-from-usda-about-pterostilbene/

Pterostilbene's Healthy Potential: November/December 2006 issue of Agricultural Research magazine

Agnes M. Rimando: USDA-ARS Natural Products Utilization Research Unit, P.O. Box 8048, Oxford, MS 38677-8048

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About the author

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Dee is a Wellness & Weight Loss Coach, a Certified Natural Health Professional, is pursuing an ND degree-Naturopathic Doctor, is a certified Raw Chef, certified in Dietary Guidelines from the Cooper Institute for Aerobics Research, former Personal Trainer, Yoga and Fitness Studio Owner, TV and Radio Guest. Health Columnist.

Deanna develops customized programs to enhance the health of her clients, educates, and coaches dieters for safe weight loss.



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What is Pterostilbene?

Posted by admin on April 26, 2011 at 9:49 am

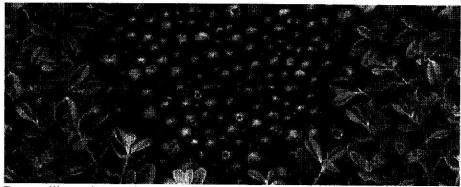
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What is Pterostilbene?

The berry-derived ingredient is proving to be a potent antioxidant and cardiovascular system supporter.

By Joanna Cosgrove

Published April 18, 2011
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Belonging to the phytoalexin class of compounds, pterostilbene is a protective compound produced by small berry plants like blueberries, cranberries, lingonberries and grapes to ward off the damage of pathogens such as bacteria or fungi. While such a complex biological process might be easy to overlook in such tiny berries, pterostilbene has been garnering quite a buzz in supplement circles where researchers are comparing its capabilities to those of resveratrol but with some decidedly interesting advantages in the realms of anti-aging, heart health, oxidative stress and memory support.

Pterostilbene and resveratrol both have the same role in the plant's defense system. "Resveratrol is one of the main phytoalexins in grapes, pterostilbene in blueberries," explained Jeremy Bartos, PhD, pTeroPure product manager for ChromaDex of Irvine, CA. "The only difference between the two is the presence of two methoxy groups in pterostilbene (resveratrol has three hydroxyl groups, pterostilbene has one along with the two methoxys).

It's the methoxy groups that make all of the difference when it comes to utilizing these compounds in the human body. "Resveratrol has two things going against it," said Dr. Bartos. "One is the fact that without the methoxy groups it is not as lipophilic (oil-soluble) as pterostilbene, so it's cellular uptake is much less than pterostilbene – pterostilbene can be taken through the cell's lipid bi-layer rather easily."

The second difference has to do with how pterostilbene is filtered through the human liver. "The liver acts as the gatekeeper to the body; it filters everything that comes through and compounds it does not recognize (such as pharmaceuticals, plant chemicals and toxins) it will tag for elimination from the body," said Dr. Bartos. "In the case with stilbenes such as resveratrol and pterostilbene the liver will typically glucuronidate (add a glucuronic acid molecule, a compound very similar to glucose) or sulfate any free hydroxyl groups it can find. Since resveratrol has three hydroxyl groups it is tagged for elimination much quicker and easier than pterostilbene with only one hydroxyl group, leading to a half-life in the blood of ~14 minutes compared to ~105 minutes for pterostilbene."

To underscore his comment, Dr. Bartos pointed to a recently published paper which confirmed the bioavailability of pterostilbene as being "three to four times greater than that of resveratrol," and noted that "systemic exposure to pterostilbene was substantially greater than was systemic exposure

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to resveratrol." (Cancer Chemotherapy & Pharmacology, 2010 Nov 30)

Canon of Research

Pterostilbene has been a part of the supplement research vernacular since the early 1990s but only became more well-known inthe mid 2000s. Much of the current pterostilbene research being conducted today mirrors the studies that made resveratrol a household word, Dr. Bartos explained.

A study published by the USDA in 2005 compared both pterostilbene and resveratrol to determine their ability to induce PPAR-alpha activation, which is involved in fatty acid and lipid catabolism as its activation leads to decreased triglyceride and very low density lipoprotein (VLDL) synthesis. "It was shown in the study that pterostilbene activated PPAR-alpha *in vitro* better than all compounds tested, including both resveratrol and the pharmaceutical ciprofibrate," said Dr. Bartos. "Subsequer structural and *in vivo* studies confirmed the correlation between pterostilbene's activation of PPAR-alpha and cholesterol lowering. In fact, the first human clinical trial on pterostilbene currently underway at the University of Mississippi has cholesterol as its primary endpoint."

A second study compared the ability of resveratrol and pterostilbene to protect cells against oxidative stress. "A collaboration of scientists from Tufts University and the USDA measured the ability of several plant polyphenols to protect cells from damage caused by oxidative stress and found that while pterostilbene was able to protect the cells, resveratrol was not. This is important for several reasons," Dr. Bartos recalled. "First of all, the buzz around the industry is 'anti-oxidant' and 'ORAC,' (Oxygen Radical Absorbance Capacity), a quick and dirty way to measure the potential ability of a compound to neutralize free radicals before they cause oxidative damage."

The problem with ORAC is that it only measures potential of a compound, not the actual ability, he said. "High ORAC compounds may have all the potential in the world, but if they can't get to where they need to be in order to do the job they are supposed to be doing (in this case neutralizing free radicals) then the potential is never realized. So it is important to note that scientists went even further to show that pterostilbene's ability to protect cells from oxidative damage can be seen in animal models as well as cell models.

"This is important because it shows that pterostilbene has the ability to localize in the places where it can be used," he continued. "Oxidative damage seems to be at least partially responsible for aging disease such as Alzheimer's. The scientists showed a direct correlation between the levels of pterostilbene in rat's hippocampus (memory center of the brain) and their ability to remember how to run a maze, showing that pterostilbene's protection against oxidative stress can be translated to behavioral changes as well."

The most noteworthy up and coming pterostilbene studies will focus on sirtuin activation. "One of the latest papers is entitled 'Pterostilbene Is More Potent than Resveratrol in Preventing Azoxymethane (AOM)-Induced Colon Tumorigenesis via Activation of the NF-E2-Related Factor 2 (Nrf2)-Mediated Antioxidant Signaling Pathway,' [which] directly compares the abilities of pterostilbene and resveratrol to inhibit the formation of colon tumors in mice based on their anti-oxidant abilities alone," said Dr. Bartos. "They found that while both pterostilbene and resveratrol were able to inhibit tumor formation by enhancing expression of antioxidant enzymes via activation of the Nrf2 protein, pterostilbene was significantly more potent than resveratrol."

Market Potential

Because pterostilbene is still in its relative infancy, its market size and potential is somewhat difficult to calculate. Dr. Bartos said the first pterostilbene products were rolled out directly to physicians. Niche mail and Internet order markets are the next distribution phase, with retail venues as phase three. ChromaDex's pTeroPure brand pterostilbene enjoyed a retail debut earlier this year and has steadily gained traction with larger retail companies—a phenomenon that should be bolstered over the next few weeks when the ingredient attains self-affirmed Generally Recognized As Safe (GRAS) status.

"With this hurdle behind, pTeroPure is no longer limited to the nutraceutical market and can be included in functional foods such as granola bars, cereal, yogurt, etc.," said Dr. Bartos. "Imagine a cheese product that contains an ingredient that can improve your heart health, or a cookie that contains a compound used for centuries to support blood sugar levels."

Research has suggested that pterostilbene and resveratrol can also work synergistically to protect cells from damage caused by oxidative stress and, in fact, may be more effective together than if used separately. To that end, last month Nutraceutical International Corporation added a new resveratrol and pTeroPure pterostilbene combination product to its Solaray Guaranteed Potency line of products.

In addition to the supplement market, ChromaDex also has high expectations for success with pTeroPure in the cosmetics market. "Because pterostilbene is lipophilic (oil-soluble), not only is it compatible with oil-based creams, but it also has fantastic uptake in to the cells because it can easily get through the cell's lipid bilayer," Dr. Bartos said. "This allows the ability to absorb a powerful anti-oxidant right into the skin where it can work to limit damage associated with aging. Recent experiments with the bacteria that causes acne have also shown promise."

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Pterostilbene is a powerful antioxidant and may be able to help to lower bad cholesterol levels and prevent heart disease. It was called next generation of resveratrol. We have realized mass production of

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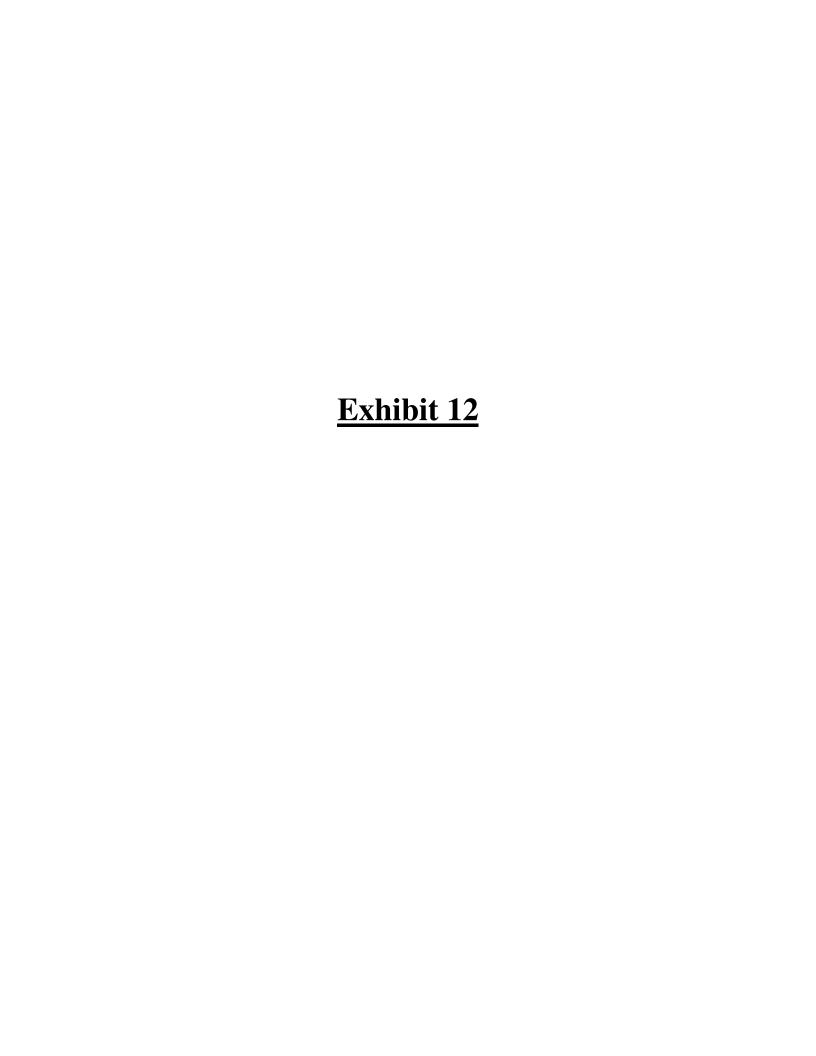
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DESCRIPTION

Resveratrol-M provides pterostilbene, a methylated resveratrol that is naturally occurring in berries. This formula also contains resveratrol, curcumin and vitamin D3 which can function synergistically with ptersostilbene to support healthy aging.

Pterostilbene is considered the next generation of resveratrol. Pterostilbene has advantages over resveratrol: superior biological activity, better oral bioavailability, and slower metabolism in the body. pTeroPure pterostilbene is a nature identical form of transpterostilbene, a stilbene found in certain berries.

Both pterostilbene and resveratrol support mitochondrial function and healthy aging by activating SIRT1, one of the key enzymes of the sirtuin family. Sirtuins, a class of proteins, have been implicated in influencing aging and regulating transcription, apoptosis and stress resistance, as well as energy efficiency and alertness during low-calorie situations. Pterostilbene also supports cardiovascular health; results from in vitro studies showed that pterostilbene acts as a PPARR agonist and may be a more effective PPARR agonist and hypolipidemic agent than resveratrol.

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Other Ingredients: Cellulose (capsule), calcium citrate, microcrystalline cellulose, vegetable stearate, silica and titanium dioxide.

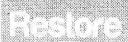
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Exhibit 13





Resveratrol-MTM



A Methylated Formula for Healthy Aging and Cardiovascular Support[†]

A DIETARY SUPPLEMENT

DESCRIPTION

Resveratrol-M^{***} provides pterostilbene, a methylated resveratrol that is naturally occurring in berries. This formula also contains resveratrol, curcumin and vitamin D3 which can function synergistically with ptersostilbene to support healthy aging.†

FUNCTIONS

Pterostilbene, a methylated form of resveratrol is considered the next generation of resveratrol. Pterostilbene has advantages over resveratrol. superior biological activity, better oral bioavailability, and slower metabolism in the body, pTeroPure™ pterostilbene is a nature identical form of transpterostilbene, a stilbene found in certain berries. The enhanced activity of pterostilbene compared to resveratrol may, in part, be explained by structural differences. Pterostilbene with two methoxy groups and one hydroxyl group has greater lipophilicity and a higher potential for cellular uptake than resveratrol. which has three hydroxyl groups. Pterostilbene showed strong inhibitory activity, much more than resveratrol, against a particular form of cytochrome P450. Researchers have suggested that these two compounds also work synergistically, supporting the theory that a combination of pterostilbene and resveratrol in a formulation may be more effective than using these ingredients separately.

Both pterostilbene and resveratrol support mitochondrial function and healthy aging by activating SIRTI, one of the key enzymes of the sirtuin family. Sirtuins, a class of proteins, have been implicated in influencing aging and regulating transcription, apoptosis and stress resistance, as well as energy efficiency and alertness during low-calorie situations.† Pterostilbene also supports cardiovascular health; results from in vitro studies showed that pterostilbene acts as a PPARR agonist and may be a more effective PPARR agonist and

hypolipidemic agent than resveratrol. In vivo studies demonstrate that pterostilbene possesses lipid and glucose lowering effects.†

Resveratrol-M™ also contains Resvida™, a pure resveratrol clinically studied for its safety. Resvida resveratrol is unique as it is not a plant extract and is not derived from plant sources, therefore presents no risk for contamination with pesticides and other potentially unwanted compounds. Studies indicate resveratrol may be supportive in maintaining the normal aging process by helping to prevent free radical damage that can lead to premature aging of cells.† Studies have shown that curcumin, a naturally occurring group of compounds from turmeric. function as powerful antioxidants and can help support neurological and cardiovascular function.† Since curcumin exhibits poor oral absorption in the body. Douglas Labs has chosen a highly bioavailable curcumin called MERIVA®. Pharmacokinetic comparison studies have shown MERIVA® to have up to a 20-fold improvement in bioavailability versus the standard 95% turmeric extracts due to proprietary PHYTOSOME technology which increases hydrolytic

Vitamin D, curcumin and resveratrol/pterostilbene share many common targets and points of overlap in gene regulation, signal transduction and therapeutic effects. The nature of this overlap suggests synergy upon combination, potentially leading to an influence on inflammatory and cardioprotective pathways. Japanese wasabi with a specially standardized broccoli sprout concentrate and organic pomegranate extract are added to this formula to support the body's natural antioxidant and detoxification processes.† Sulforaphane, an ITC found in broccoli, has been found to significantly increase the activity of detoxification enzymes (cytochrome P450).

INDICATIONS

Resveratrol- M^{TM} is a methylated formula for healthy aging and cardiovascular support.

FORMULA (#200901)

1 Vegetarian Capsule Contains:

Vitamin D-3	1000 IU
MERIVA® Curcumin Phytosome	
Resveratrol (as trans-resveratrol)	100 mg
Pterostilbene (pTeroPure™)	50 mg
Proprietary Cruciferous	150 mg

Vegetable and Fruit Blend:

Wasabia japonica (rhizome, providing 600 mcg total glucosinolates), Broccoli powder (sprout) (BroccoPhane™) (standardized to contain 200 mcg of sulforaphane) and Organic Pomegranate powder (fruit).

Other ingredients: Cellulose (capsule), calcium citrate, microcrystalline cellulose, vegetable stearate, silica and titanium dioxide.

Moriva^a is a registered tradomark of Indena S.p.A, Milario. is a trademark of ChromaDex, Inc. is a redistered trademark of DSM

SUGGESTED USE

Adults take 1 capsule daily with meals or as directed by your healthcare professional.

SIDE EFFECTS

No adverse side effects reported.

STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

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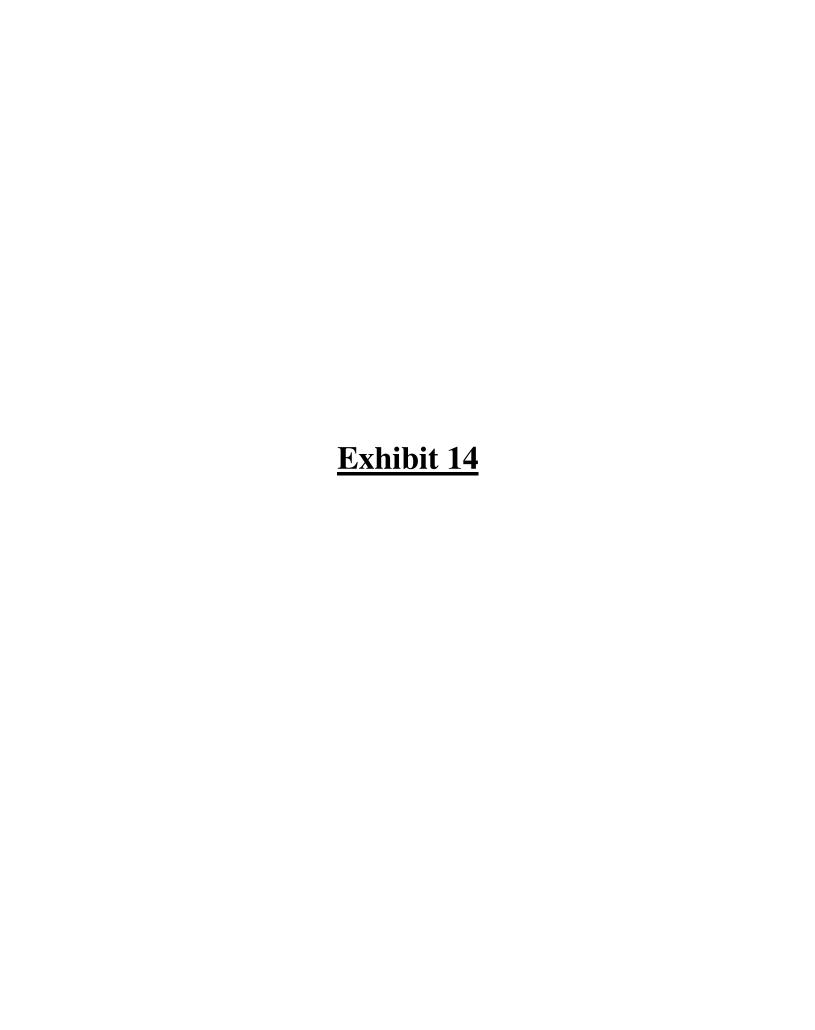
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ABOUT SSL CERTIFICATES Resveratrol & Pterostilbene May Support Cognitive Function 12/05/11



Resveratrol and pterostilbene (pronounced "tero-STILL-bean") are closely related antioxidant compounds that have much in common. Both are aromatic hydrocarbons called "stilbenes," both are produced by some plants as part of the plant's natural defense system, and both compounds have demonstrated significant potential health benefits. Specifically, both resveratrol and pterostilbene have been linked to distinct heart health, memory, anti-inflammatory, and antioxidant benefits.

In recent years there has been a tremendous amount of research conducted on resveratrol, and an increasing amount of research on pterostilbene, which some have started to call "next generation resveratrol." Structurally, the two molecules

are nearly identical. The only difference between the two is that pterostilbene replaces a methoxy group for one of the hydroxy groups on resveratrol. That difference seems to make pterostilbene more biologically active than resveratrol and gives pterostilbene a longer half-life in the body (meaning it spends more time in the body after consumption).

Two new studies on lab mice indicate that both resveratrol and pterostilbene may support brain health, with pterostilbene yielding better results than resveratrol. 1,2

The first of the two studies, which was conducted at Case Western Reserve University in Cleveland, OH, studied the effects of low-dose resveratrol and low-dose pterostilbene on a mouse model of Alzheimer's Disease. For the study, mice genetically predisposed to develop age-related cognitive decline were fed either identical doses of resveratrol or pterostilbene for two months. The doses were said to be approximately equal to a human drinking two glasses of red wine daily.

The researchers found that both resveratrol and pterostilbene improved cognitive function, however the pterostilbene also reduced markers of cellular stress and inflammation, while resveratrol did not. Keeping with previous studies, the researchers associated these results with pterostilbene's chemical structure. The researchers stated that "the substitution of the hydroxy group of resveratrol with a methoxy group in pterostilbene makes this molecule more lipophilic [fat-binding]. This change may lead to better bioavailability of pterostilbene and consequently a more potent neuroprotective effect in the brain." The researchers went on to explain that this theory is supported by the fact that they found higher levels of pterostilbene in both the blood and brain tissue of the mice.

The researchers point out that while it has not yet been demonstrated that pterostilbene has cognitive benefits in humans, there have been studies that have found cognitive benefits from eating blueberries. Blueberries have the highest levels of naturally occurring pterostilbene of any food, although these levels are still quite minute.

In the second study, Japanese researchers found resveratrol supported cognitive health at higher levels, but not at very low levels. For the study, the researchers fed mice red wine that had been standardized to contain either 20mg or 3.1mg of resveratrol per liter. The mice were fed a mouse-sized portion, equivalent to one glass of wine to a human.

The natural levels of resveratrol in red wine vary greatly from varietal to varietal, and season to season. According to the authors of this study, the average concentration of resveratrol in red wine is roughly 4.7 mg per liter.

The researchers found that the wine with the high resveratrol concentration (20mg/L) improved cognitive function in mice, but the low concentration did not.

Given that the average resveratrol level in wine is higher than the low level tested, and that people tend to drink more than one glass of wine at a time, the researchers concluded that "drinking red wines with regular concentrations of resveratrol for long periods lowers the risk of age-associated cognitive



decline." They went on to state that their findings on resveratrol "may explain at least in part the beneficial effects of moderate consumption of red wine on cognitive function in humans."

These results taken into context with the first study seem to indicate that while resveratrol may have some benefits at low levels, the amount of resveratrol required for cognitive benefits may be greater than the levels obtained from mild-to-moderate wine consumption. This would indicate that supplementation is not only a good alternative for those who do not want the alcohol and calories associated with wine, but it may also be a good supplement even for those who already consume moderate amounts of red wine.

Whole Health offers resveratrol & pterostilbene together in a single product in addition to several other resveratrol products, including:

- three products that use Ultra-Pure Fluxome Resveratrol from natural fermentation,
- · two resveratrol products from Japanese Knotweed,
- · VitaBev effervescent multivitamin drink with resveratrol,
- · PomeHealth Pomegranate and Resveratrol blend, and
- High-Potency Liver Detox & Support with resveratrol.

Find the one that is right for you and learn more about resveratrol and its potential benefits here.

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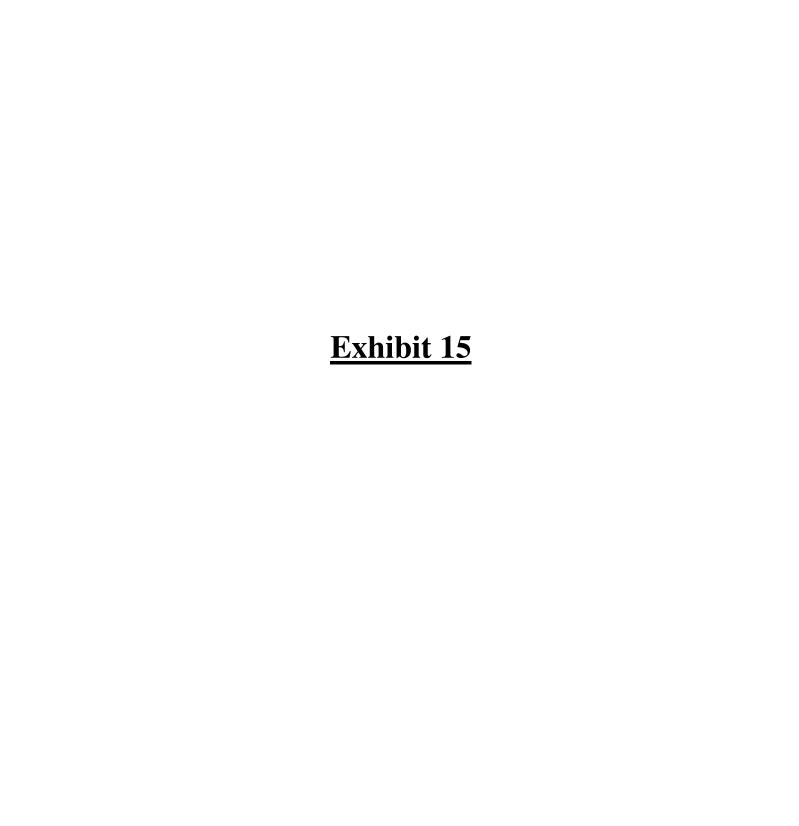
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Introducing Pterostilbene: The "Other" Resveratrol

Share Tweet By Michael A. Smith, MD

By now, just about everyone has heard about what my dad calls "the red wine supplement" — resveratrol.

Unfortunately, only a few people (mostly Life Extension members) have heard about its cousin: pterostilbene.

Well, as we predicted, pterostilbene is now making headlines. It turns out this antioxidant powerhouse may be even better than its famous cousin for boosting brain health.

What is Pterostilbene?

Pterostilbene, found in blueberries, grapes, and in the bark of the Indian Kino Tree, has been used for centuries in Ayurvedic medicine. Pterostilbene and resveratrol are both stilbene compounds. They're closely related structurally, which gives them similar but not identical functions.

Researchers have found that these two compounds work in a synergistic way to activate your "longevity genes." Scientists have found that resveratrol first activates what are called upstream genes. These genes, in turn, then activate a number of additional disease-preventing genes that are involved in downstream metabolic reactions. In essence, resveratrol's beneficial genetic action has a controlling effect on other genes.

Pterostilbene directly activates the genes that are "downstream" from the sites of resveratrol's action. This complements resveratrol's ability to help prevent cancer and diabetes, and helps support healthy blood lipids. Acting together, resveratrol and pterostilbene produce potent, longevity-promoting effects across the cycle of gene expression through complementary mechanisms.

However, new research is pointing towards pterostilbene as the next generation brain booster. Below we'll take a look at the latest study showing the powerful benefits it promises for your noggin.

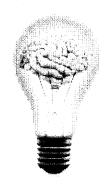
Pterostilbene Helps Old Mice Think Better

Both resveratrol and pterostilbene offer remarkable effects for both learning and memory. Although both compounds have shown benefit in this regard, it's pterostilbene that was found to be most effective at preventing loss of the neurotransmitter dopamine from memory centers in aged rats. ¹

In the latest cognitive study² done on rats, published in Neurobiology of Aging, again it was pterostilbene that showed the real benefit — not resveratrol. Two months of a pterostilbene-based diet significantly improved the rats' performance during a standard memory test called the radial arm water maze when compared with control-fed animals.

Importantly, markers of cellular stress, inflammation, and nerve cell damage were reduced by pterostilbene but not by resveratrol. The way that pterostilbene helps your body hasn't been fully understood yet, but the study's

authors believe that it positively influences an important inflammation regulator called PPAR — or peroxisome proliferator-activated receptor. PPAR is actually involved in many physiological reactions. ²The researchers concluded, "... pterostilbene is a more potent modulator of cognition and cellular stress than resveratrol."



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One Giant Leap for Rat-kind?

We know what you're probably thinking: These are rats! Sure, but all research has to start somewhere. Of course large-scale clinical trials on humans would be ideal, but unless you have a few million dollars to spare, they're out of reach. However, smaller studies on humans are currently in the works.

As little as we like to admit it, rat brains really aren't that different from human brains. Although it may seem like a leap, something that helps a rat think better is likely to help you think better too.

What do you think? Let us know in the comments!

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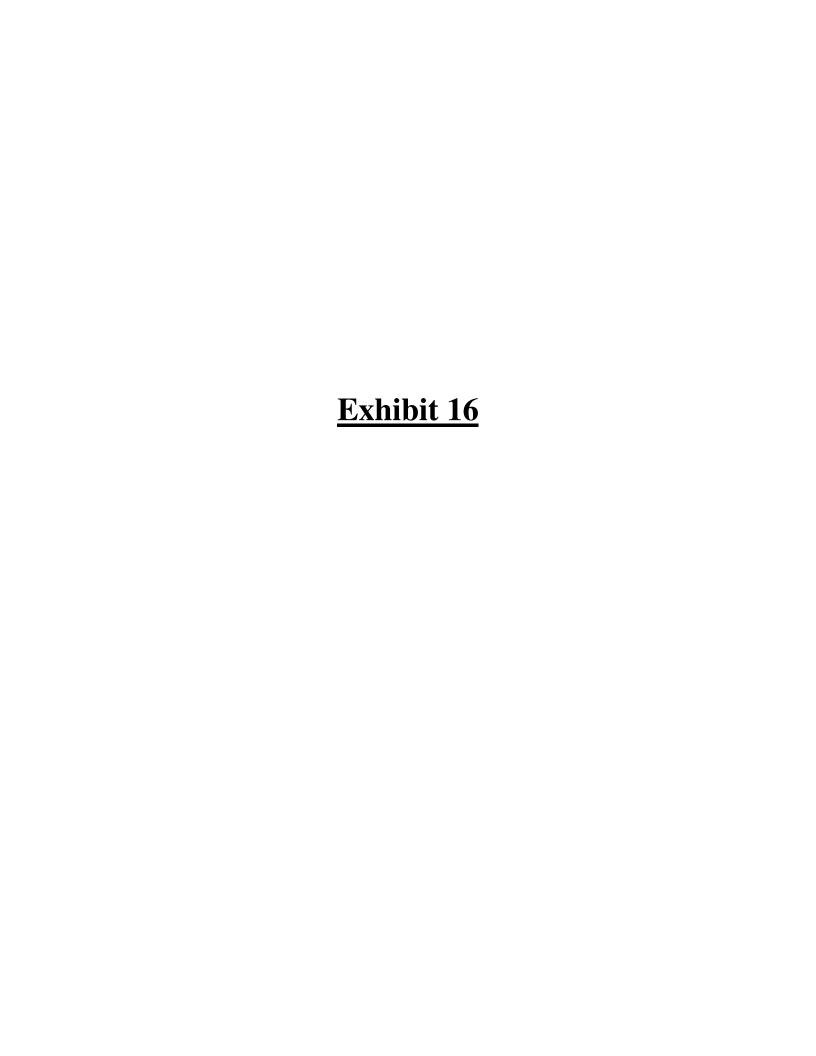
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Pterostilbene

Product No.: #1503

Product name: Pterostilbene

1. Source: Polygonum cuspidatum Sieb Et Zucc

2. Part of the plant used: roots
3. Extract ratio: 100~150: 1

3. Specifications: Pterostilbene>99%

4. Product description

Pterostilbene, a structural analog of resveratrol, is called the *next generation of resveratrol*. Pterostilbene was originally isolated from the heartwood of red sandalwood (*Pterocarpus santalinus*). Its presence in grape vines and blueberries was also reported later. Like resveratrol, Pterostilbene belongs to a class of compounds called phytoalexins. Pterostilbene and resveratrol have very similar pharmacologic, properties, however Pterostilbene has several key advantages over resveratrol, superior biological activity, better oral bioavailability and slower metabolism in the body.

5. Benefits

Strong antioxidant

May be a potent anti-aging compound Potent anti-inflammatory activity Prevents neuro-degeneration Prevents damage of oxidative stress.

Mimics calorie restriction Improves heart health

Can be used to maintain healthy cholesterol levels.

Orally active and works to decrease plasma glucose levels in some animals.

Identified as an antiviral compound with broad target specificity.

Inhibits expression of certain inflammation-related genes in the colon.

Potential for cancer chemo-prevention.

6. Advantages

All the production process complies with the GMP standard strictly

Kosher, GMP certificated

Low ash, impurity, heavy metal, solvent residue and no pesticide residue

Water and ethanol as solvent, ensure the safety of the product Complete product tracing system and technique support

7. Application

Health food, beverage, dietary supplement, and cosmetic.

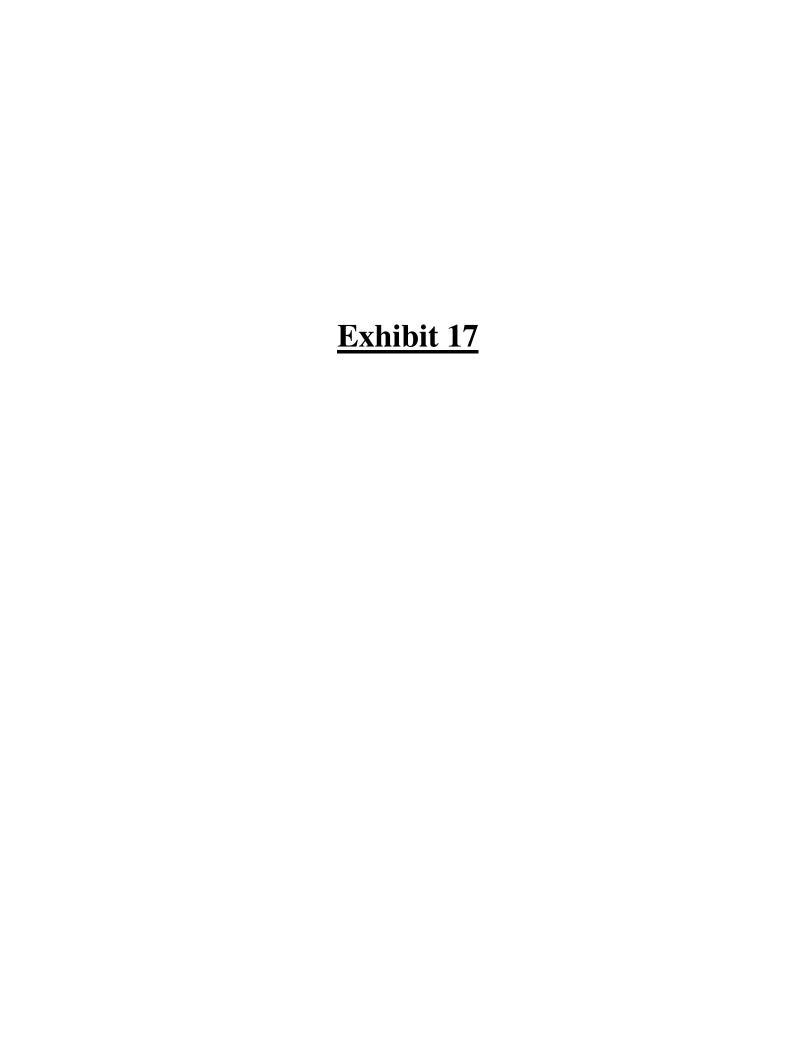
8. Packing:

According to the customers' requirement, inner packing is aluminum bag inside with double layer plastic bags.

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December, 2010

Welcome to the December edition of ChromaDex eNews!

While the economic and regulatory climate of 2010 presented the industries served by ChromaDex with some challenges, ChromaDex continued developing new products and services for our clients.

We "set THE standard" for phytochemical reference standards, and our reference standard line now exceeds 4000 unique materials. Every week we are adding new Botanical Reference Materials (BRMs) to our portfolio of products. From identity testing of raw materials to in process tests to final product testing, ChromaDex provides the complete range of phytochemical reference standards needed to be cGMP compliant.

ChromaDex continues to commit resources to our Contract Services Group. In 2010 we added a new Q-TOF Mass Spectrometer to our analytical arsenal. Our world class team of natural product and analytical chemists has dramatically expanded our range of contract services and research capabilities. ChromaDex has increased its chemical synthesis capabilities to provide products equivalent to natural ones but produced via synthetic routes.

ChromaDex now offers fine, specialty ingredients for use as a dietary supplement. Beginning with high purity resveratrol, ChromaDex just added pTeroStilbene to its new pTeroPure line of dietary supplement ingredients, and we expect that 2011 will be an exciting year for this emerging product line. Several additional specialty ingredients for dietary supplement use are also planned for launch.

We appreciate your business and wish you a prosperous new year. Happy Holidays from all

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Frank Jaksch

Articles

The 2011 ChromaDex Catalog is Here!

The ChromaDex 2011 phytochemical product catalog is the definitive source of reference materials for the dietary supplement industry. ChromaDex provides the industry with the analytical and research tools needed to meet the requirements of the Food and Drug Administration's (FDA) Good Manufacturing Practice Regulations.



ChromaDex has added over 1,000 new products to its portfolio, which brings the total found in the new catalog to over 4,000 phytochemical and botanical reference materials. A few of the

new items include an all-in-one JECFA Stevia test kit, 200 new botanical reference materials and an extensive natural product extract library for use in high-throughput screening.

Additionally, the enhanced Product Selection Guide provides a fast, easy way to locate the relevant standards for almost any botanical. The catalog also outlines the comprehensive testing and research capabilities available from ChromaDex.

If you have not received the 2011 ChromaDex catalog, please contact your technical representative or fill out our online request form.

Once you have made your product or service selection from the new 2011 ChromaDex Catalog, please contact your technical representative or sales@chromadex.com to take advantage of our limited time rewards offer ending December 23, 2010.

Download eVersion

ChromaDex Partners with Kappa Bioscience to Provide Quality Control Methods, Tools and Services for Vitamin K2

ChromaDex announced that it has entered into a global agreement with Kappa Bioscience AS (Oslo, Norway) to supply analytical reference standards, quality control methods and related analytical testing services for Vitamin K2, Menaquinone-7(MK-7) in raw materials and finished.

Read more

Pterostilbene - The Next Generation Resveratrol

Pterostilbene (tero-STILL-bean) is a natural analog of resveratrol found in certain berries such as blueberries, cranberries, sparkleberries, lingonberries, and grapes. Like resveratrol, it belongs to a class of compounds called phytoalexins, which are naturally produced by plants when under attack by pathogens such as bacteria or fungi. And like resveratrol, there are animal studies showing it's efficacy at improving heart health, most notably by correcting the dyslipidemia that leads to atherosclerosis and coronary heart disease (Rimando 2005; Pan



2008; Mizuno 2008).

pTeroPure Pterostilbene is a nature-identical, 99+% pure, all-trans pterostilbene. The pTeroPure brand pterostilbene is superior to natural extracts due to its high purity and its sustainable source material. The majority of the pterostilbene ingredients on the market are extracts made from Pterocarpus marsupium, an endangered tree found in India. The amounts of pterostilbene found in the Pterocarpus heartwood are low, leading to concentrated extracts typically in 5-25% range, meaning that there is 75-95% of something else besides pterostilbene in these extracts. The fact that Pterocarpus is an endangered species further limits its use as a viable and sustainable source of pterostilbene. Even though pterostilbene is found in blueberries and other small berries, it is typically in the 25-50ppm range, too small to be commercially viable. Because pTeroPure pterostilbene is synthetic, its starting material is a renewable and sustainable resource. ChromaDex is currently working towards GRAS for pTeroPure pterostilbene, and anticipates completing a self-affirmed GRAS study in early spring 2011 with a letter of no objection from the FDA a short time afterwards. pTeroPure Pterostilbene can currently be found in finished products from companies such as Thorne Research, Jarrow Formulas, Gaspari Nutrition, Ortho Molecular Products, Health Resources, Xymogen, and Douglas Laboratories. We are excited about the prospects for broad commercial use of Pterostilbene.

Read more

ChromaDex 99% Pure Curcumin

Curcumin has recently been gaining favor as an immune system contributor, with beneficial effects reported in arthritis, allergy, asthma, atherosclerosis, heart disease, Alzheimer's disease, cancer, and diabetes. With a market low on the turmeric biomass required for curcuminoid extraction, ChromaDex is now offering high purity (99%) curcumin. Nature-identical ChromaDex curcumin is superior to mixed curcuminoids extracts due to its high purity and its sustainable source material. Most available high purity turmeric extracts contain up to 77% curcumin, 17% demethoxycurcumin, and 3 % bisdemethoxycurcumin.



ChromaDex Curcumin has approximately 25% more curcumin by weight than the average 95% curcumin (mixed curcuminoids) extracted from turmeric, and it does not contain the additional bioinactive impurities that are also common in natural extracts. Please contact your ChromaDex representative today for pricing or to receive a sample.

Read more

EVENTS

Nutracon 2011 March 9-10, 2011 Anaheim, California, USA

Nutracon is the premier conference for ingredient and technology innovation within the health and nutrition



industry. The conference helps companies develop new science-supported products in the supplements, functional foods and beverages, and nutricosmetics sectors. At Nutracon you'll find invaluable insight on current, impactful science and business information in four tracks central to the industry's direction Nutracon will help your business stay in front of the competition. This cutting edge event rounds out with engaging networking opportunities to help you connect with important people and ideas in the industry.

For more information, visit www.nutraconference.com.

SupplyExpo & Natural Products Expo West 2011

March 11-13, 2011 Anaheim, California, USA

The best in the industry gather each year at SupplyExpo for exhibits featuring new ingredients, technologies, applications and services for healthy/functional food and beverage, dietary supplement/bioactive and nutricosmetic markets, as well as outstanding education and events. Whether you've been in the industry for forty years or you've just entered, SupplyExpo helps connect you to solutions for your success.

Co-located, Natural Products Expo West is the world's largest natural, organic and healthy products trade show. See new products from over 3,000 exhibits while networking with nearly 56,000 professionals and neers.



For more information, visit www.supplyexpo.com and www.expowest.com.

ChromaDex will be exhibiting at booth #122 . pTeroPure will be exhibiting at booth #359.

Stop by to speak with one of our representatives.



Site Map

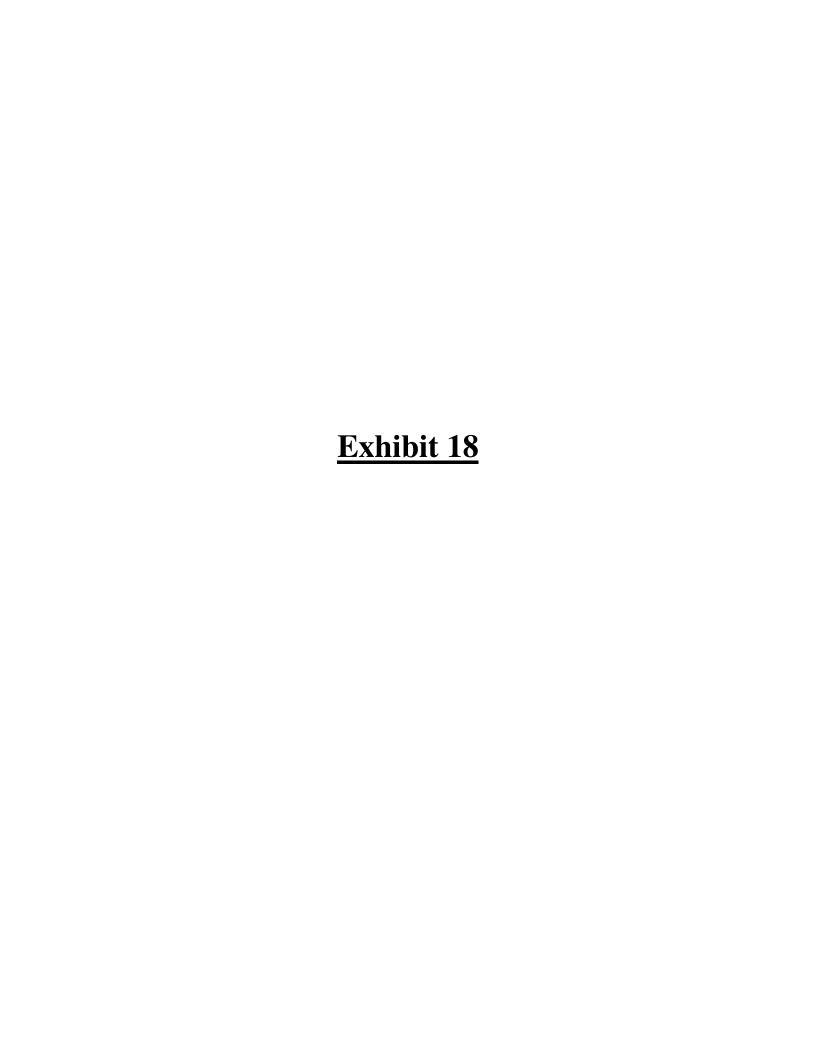
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Brand Names	Products	Health Links
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Natural Products & More		:0: 1:1 0 2 1
Herb.com	Hot Deals! Trials Movers New Freebies!	View Cart Re-Order My Account



roll over to magnify

Medicinal Nutraceutics, Pterostilbene, 100 mg Each, 60 Veggie Caps

SRP: \$39.95

Our price: \$29.96

Savings of: \$9.99 (25% Off)

Rate it

In Stock: Yes

Visit manufacturer's web site Shipping Weight 0.14 lbs (0.06 kg) Product Code: MED-27933 UPC Code: 094922279330

Package Quantity: 60 Veggie Caps

Dimensions: $1.7 \times 1.7 \times 3.3$ inches, 0.12 lbs $(0.05 \, \text{kg})$

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Expiration Date: April 2014

Top lik Reasons to Shop at iHerb!



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Wish List

Customers who bought this product, also bought any or all of the following products:







Product Details

Write Reviews

Description

- * Dietary Supplement
- * The Next Generation Resveratrol

Pterostilbene is a natural phytochemical found in small berries has been clinically shown to promote normal blood glucose and cholesterol levels, assist the body to normalize blood pressure and control soft tissue inflammation, improve cognitive function, and enhance the genetic benefits of calorie restriction.

Suggested Use

Depending on your state of health or nutritional goals, take 1 capsule once or twice daily with meals, or as recommended by your health care provider.

Supplement Facts

Supplement Facts		
Serving Size: 1 100 mg Veggie Capsules		
Servings Per Container: 60		
	Amount per Capsule	% DV
Pterostilbene (Pterocarpus marsupium)	100 mg	t
† Daily Value not established		I

Other Ingredients

 $\label{thm:local_prop_local} \textit{Hydroxypropylmethylcellulose} \ (\textit{vegetarian capsule}), \ \textit{methylcellulose}, \ \textit{silicon mineral complex}, \ \textit{I-leucine}.$

Hypoallergenic: This product does not contain milk, eggs, soy, fish, crustacean shellfish, tree nuts, peanuts, wheat, gluten, yeast, salt, preservatives, artificial color, flavor, or fragrances.

Warnings

Keep out of the reach of children.



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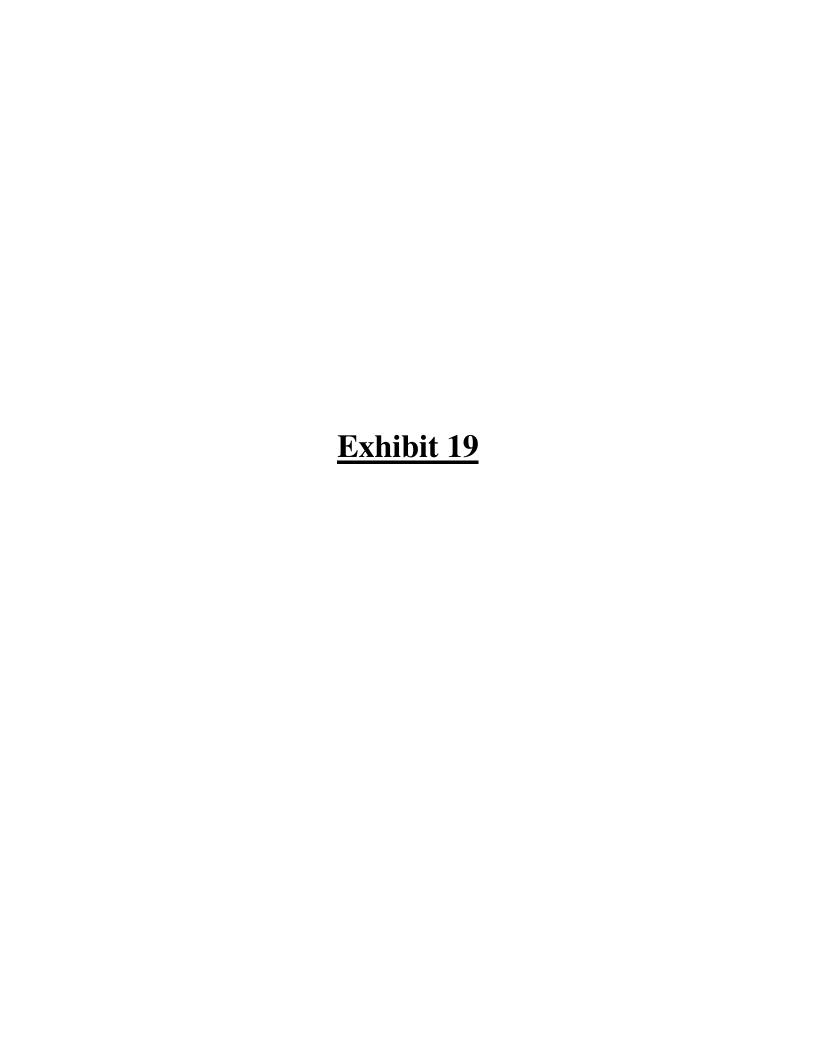


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Products - Overview

pTeroPure Pterostilbene is provided in clinically relevant amounts via the fine products below. Please click on the product pictures to research the benefits of each unique supplement.















































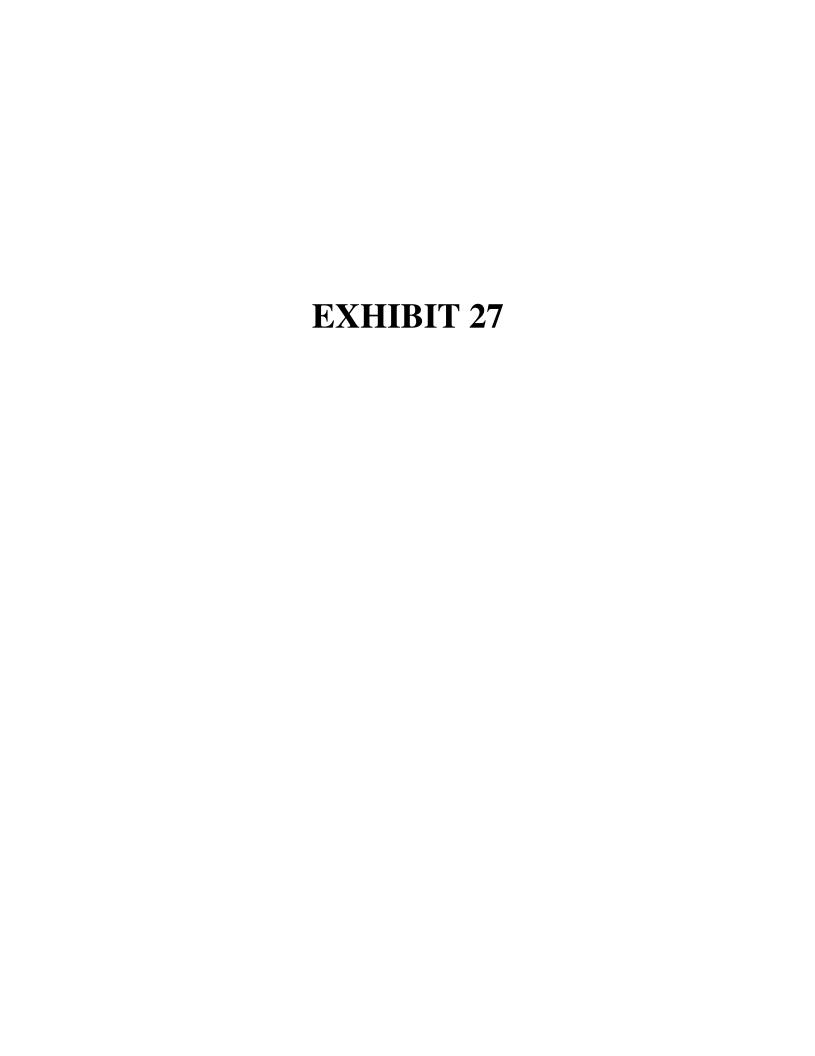


Date Bar & Cereal Bar



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Biotivia, LLC)
Opposer,)
v.) Opposition No. 91/202,162
ChromaDex, Inc.)
Applicant.)
Serial No.: 85/193,003)
Filed: December 8, 2010)
Mark: THE NEXT GENERATION)
RESVERATROL)
Published: August 23, 2011)

APPLICANT'S RESPONSES TO OPPOSER BIOTIVIA'S REQUESTS FOR ADMISSION, SET ONE

ChromaDex, Inc. ("Applicant") without waiving any objections and without admitting the relevancy or materiality of any of the Requests for Admission and/or Responses, hereby responds to Opposer Biotivia's Requests for Admission, Set One based upon the information presently available and known to Applicant as follows:

GENERAL OBJECTIONS

Applicant objects to the requests for admission to the extent they are directed to information that is not within the possession, custody or control of Applicant. Applicant objects to each request for admission to the extent that it purports to require Applicant to provide information beyond what is available to it at present after conducting a reasonable search of its own files and a reasonable inquiry of its current employees. Applicant objects to the numbering used in the First Set of Requests for Admission in that it is misleading. Applicant's objections and responses are based on its investigation and discovery to date. Applicant

expressly reserves the right to modify and supplement these objections and responses if additional information is located by Applicant. Applicant assumes no obligation to supplement its responses beyond those imposed by the Federal Rules of Civil Procedure and the Trademark Rules of Practice.

Subject to the General Objections set forth above, and without waiving the same, Applicant responds to Opposer's requests for admission as follows:

RESPONSES AND OBJECTIONS TO REQUESTS FOR ADMISSION, SET ONE

- 1. That each of the following documents, exhibited with this request and described below, is genuine:
 - a. Exhibit 1 Article about Chromadex's launch of BluScience from the website <a href="http://www.ibtimes.com/articles/161931/20110613/chromadex-corp-cdxc-to-launch-bluscience-line-of-supplement-products-via-major-retailer-gnc-nationwi.htm?utm source-feedburner&utm medium-feed&utm campaig n=Feed%3A+ibtimes%2Ftech+%28IBTimes.com+RSS+Feed+- +Technology%29

Response:

Applicant objects to Request No. l.a. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.a. is denied.

b. Exhibit 2 – Description about Chromadex and PteroPure from Chromadex's website

Response:

Applicant objects to Request No. l.b. as vague and ambiguous as to what "description" refers. Subject to and without waiving this objection or any of the General Objections, Applicant admits that the printout pictured in Exhibit 2 correspond to pages on the website of Applicant on the January 20, 2012, the date on which it appears to have been printed. In all other respects, Request No. l.b. is denied.

c. Exhibit 3 – Copies of portions of Pteropure.com

Response:

Applicant objects to Request No. l.c. as vague and ambiguous as to what "portions" refers. Subject to and without waiving this objection or any of the General Objections, Applicant admits that the printouts pictured in Exhibit 3 correspond to pages on the website Pteropure.com at the time of the January 20, 2012 date on which it appears to have been printed. In all other respects, Request No. l.c. is denied.

d. Exhibit 4 - Definition of "next-generation" from dictionary.com

Response:

Applicant objects to Request No. l.d. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.d. is denied.

e. Exhibit 5 - Description of pterostilbene from wikipedia.com

Response:

Applicant objects to Request No. l.e. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.e. is denied.

f. Exhibit 6 – Article about Douglas Labs product "Pterostilbene Supreme" from the website http://www.nutritionaloutlook.com/news/douglas-labsdebuts-pterostilbene-supplement

Response:

Applicant objects to Request No. l.f. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.f. is denied.

g. Exhibit 7 – Copy of the website http://www.great-forest.com/pro detail en/id/2.html

Response:

Applicant objects to Request No. l.g. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.g. is denied.

h. Exhibit 8 – Copy of the website http://www.alcrea-health.com/blog/?p=70

Response:

Applicant objects to Request No. l.h. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.h. is denied.

i. Exhibit 9 – Copy of the website http://naturalnews.com/027650
pterostilbene health.html

Response:

Applicant objects to Request No. l.i. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.i. is denied.

j. Exhibit 10 - Copy of the website http://whomovedmycheesecake.org/?p=427

Response:

Applicant objects to Request No. l.j. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.j. is denied.

k. Exhibit ll – Copy of the website http://www.great-forest.com/news detail en/id/5.html

Response:

Applicant objects to Request No. l.k. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.k. is denied.

1. Exhibit 12 – Description of "Resveratrol-M" from the website http://www.restorehc.com/product/resveratrol-m

Response:

Applicant objects to Request No. l.l. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.l. is denied.

m. Exhibit 13 – Copy of the electronic file located at http://www.restorehc.com/sites/default/files/uploaded-images/cardio-resveratrol-m 0.pdf describing "Resveratrol-M"

Response:

Applicant objects to Request No. l.m. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.m. is denied.

n. Exhibit 14 – Copy of the website http://www.wholehealth.com/health-articles/resveratrol-pterostilbene-may-support-cognitive-function

Response:

Applicant objects to Request No. l.n. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.n. is denied.

o. Exhibit 15 – Copy of the website http://blog.lef.org/2011/12/pterostilbeneother-resveratrol.html

Response:

Applicant objects to Request No. 1.o. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. 1.o. is denied.

p. Exhibit 16 - Copy of the website http://www.nutripharma.net/herb-pe/1503-Pterostilbene.html

Response:

Applicant objects to Request No. l.p. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.p. is denied.

q. Exhibit 17 – Copy of a portion of Chromadex's website https://chromadex.com/Detailsp.aspx?Aid=438

Response:

Applicant objects to Request No. 1.q. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. 1.q. is denied.

r. Exhibit 18 - Copy of the website http://www.iherb.com/Medicinal-Nutraceutics-Pterostilbene-100-mg-Each-60-Veggie-Caps/36723?utm source=nt&utm medium=c

Response:

Applicant objects to Request No. l.r. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Request No. l.r. is denied.

s. Exhibit 19 – Copy of a portion of the Pteropure website http://www.pteropure.com/products/index.html

Response:

Applicant objects to Request No. l.s. as vague and ambiguous as to what "portion" refers. Subject to and without waiving this objection or any of the General Objections, Applicant admits that the printouts pictured in Exhibit 19 appear to come from the website Pteropure.com the time of the January 20, 2012 date on which it appears that Opposer printed it. In all other respects, Request No. l.s. is denied.

- 2. That each of the following statements is true:
 - a. Chromadex, Inc. ("Chromadex") is a California corporation.

Response:

Request No. 2.a. is admitted.

b. Chromadex was established in 1999.

Response:

Request No. 2.b. is admitted.

c. Chromadex is a natural products company that provides proprietary, science based solutions and ingredients to the dietary supplement, food and beverage, cosmetic, and pharmaceutical industries.

Response:

Request No. 2.c. is admitted.

d. In April of 2010, Chromadex launched a product called pTeroPure.

Response:

Request No. 2.d. is admitted.

e. pTeroPure is a formulation of the compound pterostilbene.

Response:

Applicant objects to Request No. 2.e. as vague and ambiguous as the meaning of the term "formulation" as it appears in this Request and therefore is unable to either admit or deny the accuracy of this Request No. 2.e., which is therefore denied.

f. pTeroPure has been described by Chromadex as a proprietary, ultrapure formulation of the naturally occurring compound pterostilbene.

Response:

Request No. 2.f. is admitted.

g. In June of 2011, Chromadex launched a line of dietary supplements called BluScience, which features pTeroPure as an ingredient.

Response:

Request No. 2.g. is admitted.

h. The mark "THE NEXT GENERATION RESVERATROL" (the "Mark") has been applied to pTeropure.

Response:

Applicant objects to Request No. 2.h. as vague and ambiguous, as it is not clear what the term "applied" means in the context of this Request. Subject to and without waiving these objection or any of the General Objections, Applicant admits that it has used the Mark in connection with its pTeropure brand products. In other respects, Request No. 2.h. is denied.

i. The Mark has been applied to BluScience products.

Response:

Applicant objects to Request No. 2.i. as vague and ambiguous, as no limitation has been placed on "Bluscience products" and it is not clear what the term "applied" means in the context of this

Request. Subject to and without waiving these objection or any of the General Objections, Applicant admits that it has used the mark THE NEXT GENERATION RESVERATROL in connection with one or more of the products branded under the name BluScience. In other respects, Request No. 2.i. is denied.

j. The Mark has been applied to Chromadex products.

Response:

Applicant objects to Request No. 2.j. as vague and ambiguous, as no limitation has been placed on "Chromadex products" and it is not clear what the term "applied" means in the context of this Request. Subject to and without waiving these objection or any of the General Objections, Applicant admits that it has used the mark THE NEXT GENERATION RESVERATROL in connection with one or more of the products produced by Chromadex.

k. Chromadex owns the domain pteropure.com.

Response:

Request No. 2.k. is admitted.

l. Chromadex controls the website pteropure.com.

Response:

Request No. 2.l. is admitted.

m. Chromadex owns the domain chromadex.com.

Response:

Request No. 2.m. is admitted.

n. Chromadex controls the website chromadex.com.

Response:

Request No. 2.n. is admitted.

o. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter to an entity, other than Biotivia, LLC, which has applied the Mark to pterostilbene products.

Response:

Request No. 2.o. is denied.

p. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter to an individual who has applied the Mark to pterostilbene products.

Response:

Request No. 2.p. is denied.

q. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter regarding the Mark.

Response:

Request No. 2.q. is admitted.

r. Chromadex, directly or through its counsel, has filed at least one complaint against an entity which has applied the Mark to pterostilbene products.

Response:

Applicant objects to this Request No. 2.r. to the extent that it mischaracterizes or implies that Applicant is a party to more than one enforcement action concerning the Mark. Subject to and without waiving this objection or any of the General Objections, Applicant admits that it has filed one complaint against Opposer concerning the Mark. In all other respects, Request No. 2.r. is denied.

s. Chromadex, directly or through its counsel, has filed at least one complaint against an individual who has applied the Mark to pterostilbene products.

Response:

Applicant objects to this Request No. 2.s. to the extent that it mischaracterizes or implies that Applicant is a party to more than one enforcement action concerning the Mark. Subject to and without waiving this objection or any of the General Objections, Applicant admits that it has filed one complaint against Opposer concerning the Mark. In all other respects, Request No. 2.s. is denied.

t. Chromadex, directly or through its counsel, has filed at least one complaint regarding the Mark.

Response:

Applicant objects to this Request No. 2.t. to the extent that it mischaracterizes or implies that Applicant is a party to more than one litigation concerning the Mark. Subject to and without waiving this objection or any of the General Objections, Applicant admits that it has filed one complaint against Opposer concerning the Mark. In all other respects, Request No. 2.t. is denied.

u. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter to an entity, other than Biotivia, LLC, which has applied phrases similar to the Mark to pterostilbene products.

Response:

Request No. 2.u. is denied.

v. Chromadex, directly or through its counsel, has mailed at least one cease and desist letter, to an individual who has applied phrases similar to the Mark to pterostilbene products.

Response:

Applicant objects to this Request No. 2.v. to the extent that it mischaracterizes or implies that Applicant is a party to more than one enforcement action concerning the Mark. Subject to and without waiving this objection or any of the General Objections, Applicant admits that it has sent Opposer a cease and desist letter concerning the Mark. In all other respects, Request No. 2.v. is denied.

w. Chromadex, directly or through its counsel, has filed at least one complaint against an entity, other than Biotivia, LLC, which has applied phrases similar to the Mark to pterostilbene products.

Response:

Applicant objects to this Request No. 2.w. to the extent that it mischaracterizes or implies that Applicant is a party to more than one enforcement action concerning the Mark. Request No. 2.w. is denied.

x. Chromadex, directly or through its counsel, has filed at least one complaint against an individual who has applied phrases similar to the Mark to pterostilbene products.

Response:

Applicant objects to this Request No. 2.x. to the extent that it mischaracterizes or implies that Applicant is a party to more than one enforcement action concerning the Mark. Request No. 2.x. is denied.

y. Chromadex filed a complaint against Biotivia, LLC for using the phrase "taking Resveratrol to the next level" in conjunction with Biotivia, LLC's pterosilbene product.

Response:

Applicant objects to this Request No. 2.y. to the extent that it mischaracterizes ongoing civil litigation between Applicant and Opposer. Subject to and without waiving this objection or any of the General Objections, Request No. 2.y. is admitted.

z. Chromadex's complaint against Biotivia, LLC for using the phrase "taking Resveratrol to the next level" is based, in whole or in part, on the Mark.

Response:

Applicant objects to this Request No. 2.z. to the extent that it mischaracterizes ongoing civil litigation between Applicant and Opposer. Subject to and without waiving this objection or any of the General Objections, Request No. 2.z. is admitted.

aa. Pterostilbene can be accurately described as a compound which is chemically related to resveratrol but has certain advantages over resveratrol.

Response:

Applicant objects to Request No. 2.aa. as vague and ambiguous as to the meaning of the term "related" as it appears in the Request and therefore is unable to either admit or deny the accuracy of the Request No. 2.aa., which is therefore denied.

bb. Pterostilbene is chemically related to resveratrol.

Response:

Applicant objects to Request No. 2.bb. as vague and ambiguous as to the meaning of the term "related" as it appears in the Request and therefore is unable to either admit or deny the accuracy of the Request No. 2.bb., which is therefore denied.

cc. Pterostilbene is a methylated resveratrol analog naturally found in berries with superior biological activity, better oral bioavailability, and metabolized more slowly in the body, allowing more time for its antioxidant activities to act.

Response:

Applicant objects to Request No. 2.cc. as a vague and ambiguous compound and therefore is unable to either admit or deny the accuracy of the Request, which is therefore denied.

dd. The phrase "Next Generation" can be accurately defined as "pertaining to the next generation in a family; also, pertaining to the next stage of development or version of a product, service, or technology."

Response:

Request No. 2.dd. is denied.

ee. Pterostilbene is described as a compound which is chemically related to resveratrol on websites not owned by Chromadex.

Response:

Applicant objects to Request No. 2.ee. to the extent that it requests information that is not in the possession custody, or control of Applicant. Subject to and without waiving this objection or any of the General Objections, Request No. 2.ee. is denied.

ff. Pterostilbene is described as the next generation of resveratrol on websites not owned by Chromadex.

Response:

Applicant objects to Request No. 2.ff. to the extent that it requests information that is not in the possession, custody, or control of Applicant. Subject to and without waiving this objection or any of the General Objections, Request No. 2.ff. is denied.

gg. Chromadex has approved the use of the Mark by its customers.

Response:

Request No. 2.gg. is denied.

hh. The Mark has not acquired secondary meaning.

Response:

Request No. 2.hh. is denied.

Respectfully submitted,

Dated: March 23, 2012

Joseph T. Nabor Alisa C. Simmons

FITCH, EVEN, TABIN & FLANNERY, LLP

120 South LaSalle Street, Suite 1600

Chicago, Illinois 60603-3406

Telephone: 312.577.7000 Facsimile: 312.577.7007

Attorneys for Applicant ChromaDex, Inc.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing APPLICANT'S RESPONSES TO OPPOSER BIOTIVIA'S REQUESTS FOR ADMISSION, SET ONE was served by email, upon:

Mr. Aaron Shechet Chandler & Shechet LLP 1844 Bagley Avenue Los Angeles, CA 90035 Counsel@SolutionsLLP.com Attorney for Opposer Biotivia, LLC.

On this 23rd day of March, 2012

Joseph T. Nabor

Alisa C. Simmons

FITCH, EVEN, TABIN & FLANNERY

120 South LaSalle Street, Suite 1600

Chicago, Illinois 60603-3406

Telephone: 312.577.7000 Facsimile: 312.577.7007

Attorneys for Applicant ChromaDex, Inc.

EXHIBIT 28

From: TMOfficialNotices@USPTO.GOV
Sent: Tuesday, December 31, 2013 00:32 AM

To: carolinewalrad@gmail.com

Subject: Official USPTO Notification: TMOG Publication Confirmation for U.S. Trademark SN 86118432

TRADEMARK OFFICIAL GAZETTE PUBLICATION CONFIRMATION

U.S. Serial Number: 86-118,432

Mark: POTENSHAA(STANDARD CHARACTER MARK)

International Class(es): 003

Owner: The Trustees of The Walrad Trust

Docket/Reference Number:

The mark identified above has been published in the Trademark Official Gazette (TMOG) on Dec 31, 2013.

To View the Mark in the Next Generation TMOG (eOG):

Click on the following link or paste the URL into an internet browser: http://tmog.uspto.gov/#date=2013-12-31&serial=86118432

To View the Mark in the Legacy format TMOG:

- 1. Click on the following link or paste the URL into an internet browser: http://www.uspto.gov/web/trademarks/tmog/20131231_OG.pdf#page=00000341.
- 2. Locate your mark on the displayed page.

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EXHIBIT 29

Dictionary Better writing World of words Puzzles and games

Dictionary Language resources

Go US English

Definition of **next** in English

next

Syllabification: (next)
Pronunciation: /nekst/

Translate **next** | into French | into German | into Italian | into Spanish

adjective

1 (of a time or season) coming immediately after the time of writing or speaking:

we'll go next year

next week's parade

 (of a day of the week) nearest (or the nearest but one) after the present:

not this Wednesday, next Wednesday

[postpositive]:

on Monday next

 (of an event or occasion) occurring directly in time after the present or most recent one, without anything of the same kind intervening:

the next election

next time I'll bring a hat

 ${\bf 2}$ coming immediately after the present one in order, rank, or space:

the woman in the next room

the next chapter

building materials were next in importance

adverb

on the first or soonest occasion after the present; immediately afterward:

 $wondering\ what\ would\ happen\ next$

next, I heard the sound of voices

• [with superlative] following in the specified order: Joe was the next oldest after Martin

noun

the next person or thing:

one moment he wasn't there, the next he was

the week **after next**

preposition

archaic

next to:

More results for next

Cite

in the same or next breath us.Eng
next to us.Eng
what next us.Eng
next best us.Eng
next door us.Eng
next in line us.Eng

Result list for next

Word of the day

infographic

/ infō grafik

noun

a visual image such as a chart used to represent information ...

See full definition »

SIGN UP

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he plodded along next him

Phrases

next in line

immediately below the present holder of a position in order of succession:

he is **next in line to** the throne

next to

- 1 in or into a position immediately to one side of; beside: we sat next to each other
- 2 following in order or importance: next to buying a whole new wardrobe, nothing lifts the spirits quite like a new hairdo!
- 3 almost:

Charles knew next to nothing about farming

4 in comparison with: next to her I felt like a fraud

the next world

(according to some religious beliefs) the place where one goes after death.

what next

an expression of surprise or amazement.

Origin:

Old English $n\bar{e}hsta$ 'nearest', superlative of $n\bar{e}ah$ 'nigh'; compare with Dutch naast and German $n\ddot{a}chste$

next in other Oxford dictionaries

Definition of next in the British & World English dictionary

Reference to **next** in Language Resources

- Onto or on to?
- 'Onto' or 'on to'?
- Prepositions
- Doublets
- Phrases
- · What is the origin of the word 'quiz'?

next, nearby words in English

- Newtonian mechanics
- Newtonian telescope
- Newyorican
- NEX
- NEXRAD
- next
- next best
- next door
- next door to
- next in line

2 of 3

• next of kin

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EXHIBIT 30

Help Log in or Subscribe Dictionary Better writing World of words Puzzles and games Dictionary Language resources **US English**

Definition of **generation** in **English**

generation

Syllabification: (gen·er·a·tion) Pronunciation: /,jenə rāSHən/

Translate generation | into French | into German | into Italian | into Spanish

noun

1 all of the people born and living at about the same time, regarded collectively:

one of his generation's finest songwriters

- · the average period, generally considered to be about thirty years, during which children are born and grow up, become adults, and begin to have children of their own.
- · a set of members of a family regarded as a single step or stage in descent:

[as modifier, in combination]: a third-generation Canadian

- · a single stage in the development of a type of product: a new generation of rear-engined sports cars
- 2 the production of something:

methods of electricity generation

the generation of wealth

• the propagation of living organisms; procreation.

Derivatives

generational

Pronunciation: /-SHənl/ adjective

generationally

Pronunciation: /-SHənl-ē/ adverb

Origin:

Middle English: via Old French from Latin *generatio*(n-), from the verb generare (see GENERATE)

generation in other Oxford dictionaries

More results for generation

Cite

Generation X US. Eng Generation Y us. Eng me generation us. Eng beat generation us. Eng generation gap us. Eng Generation Xer us. Eng

Result list for generation

Word of the day

infographic

/ info grafik

noun

a visual image such as a chart used to represent information ...

See full definition »

SIGN UP

1/6/2014 3:49 PM 1 of 2

Definition of generation in the British & World English dictionary

Reference to **generation** in Language Resources

- Phrase, Fable, and Allusion
- Was the first computer 'bug' a real insect?

generation, nearby words in English

- generalize
- generalized anxiety disorder
- generally
- generalship
- generate
- · generation
- generation gap
- Generation X
- · Generation Xer
- Generation Y
- Generation Yer

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